EXHIBIT A

**IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION**

WSOU INVESTMENTS, LLC d/b/a BRAZOS LICENSING AND DEVELOPMENT, Plaintiff, v. DELL TECHNOLOGIES INC., DELL INC., AND EMC CORPORATION, Defendants.	Case No. 6:20-cv-00473-ADA Case No. 6:20-cv-00474-ADA Case No. 6:20-cv-00475-ADA Case No. 6:20-cv-00476-ADA Case No. 6:20-cv-00477-ADA Case No. 6:20-cv-00478-ADA Case No. 6:20-cv-00479-ADA Case No. 6:20-cv-00482-ADA **JURY TRIAL DEMANDED**

DEFENDANTS' INVALIDITY CONTENTIONS

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Pursuant to the Court's Scheduling Order (Case No. 6:20-cv-00473-ADA, D.I. 50),[1] Defendants Dell Technologies Inc., Dell Inc., and EMC Corporation (collectively, "Defendants") hereby provide their Invalidity Contentions.   Defendants previously served their Preliminary Invalidity Contentions on December 9, 2020.

I.   INTRODUCTION

Plaintiff WSOU Investments, LLC ("Plaintiff") served its Preliminary Infringement Contentions on October 14, 2020, asserting the following claims:

- U.S. Patent No. 7,216,921 ("'921 patent"): Claims 1, 9, 17

- U.S. Patent No. 7,212,536 ("'536 patent"): Claims 1, 12

- U.S. Patent No. 7,424,020 ("'020 patent"): Claims 1, 6

- U.S. Patent No. 7,453,888 ("'888 patent"): Claims 1, 2, 11-13, 15, 19–20

- U.S. Patent No. 7,565,435 ("'435 patent"): Claims 1–18

- U.S. Patent No. 8,402,129 ("'129 patent"): Claim 3

- U.S. Patent No. 8,913,489 ("'489 patent"): Claims 1-20

- U.S. Patent No. 9,137,144 ("'144 patent"): Claims 1, 4, 11, 12, 14

(collectively, the "Asserted Patents" and the "Asserted Claims"). Defendants contend that certain of Asserted Claims cover subject matter not eligible for patenting under 35 U.S.C. § 101, and that each of the Asserted Claims is invalid under at least 35 U.S.C. §§ 102, 103, and/or 112.[2]

These Invalidity Contentions address only those claims identified in Plaintiff's October 14, 2020 Preliminary Infringement Contentions. Defendants object to any attempt by Plaintiff to add

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[1] The same scheduling order has been entered in each of the above captioned cases. Defendants refer to the one in Case No. 6:20-cv-00473-ADA for simplicity.

[2] Defendants apply the version of Sections 102, 103, and 112 in effect prior to the effective date of the America Invents Act ("AIA") for the Asserted Patents.

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claims not identified in Plaintiff's Preliminary Infringement Contentions. That these Invalidity

Contentions may not address currently *unasserted* claims is not an admission that those claims are

valid. Defendants reserve the right to modify, amend, or supplement these Invalidity Contentions

to demonstrate the invalidity of any additional claims that the Court may allow Plaintiff to later

assert.

In addition, Plaintiff's Preliminary Infringement Contentions are entirely deficient, and fail

to provide allegations as to how the Accused Products infringe each and every claim limitation;

rather, they simply parrot the claim language and then cite various documents—and in many

circumstances, point to no evidence at all. Plaintiff therefore has prejudiced Defendants' ability

to understand, for purposes of preparing these Invalidity Contentions, what Plaintiff alleges to be

the scope of the Asserted Claims. Defendants reserve the right to amend these Invalidity

Contentions if and when Plaintiff provides proper infringement contentions as to each Asserted

Claim.

A.   Priority Date

These Invalidity Contentions are based on the earliest priority dates as identified by

Plaintiff in its infringement contentions. Plaintiff did not produce any documents evidencing

conception and reduction to practice, despite its requirement to do so under the Court's Scheduling

Order. D.I. 50. Nothing in these Invalidity Contentions shall be understood as an agreement that

any Asserted Patent is entitled to claim priority to the dates identified by Plaintiff, or to any

continuation-in-part, provisional, or foreign priority document. Defendants reserve the right to

amend these Invalidity Contentions and identify additional prior art references if Plaintiff is

permitted by the Court to later assert an earlier priority date, or is permitted by the Court to later

produce documents purporting to evidence earlier conception and reduction to practice.

Any reference to an "asserted priority date" in these Invalidity Contentions refers to the priority dates identified in Plaintiff's Infringement Contentions. Reference to a "priority date" or an "asserted priority date" should not be construed to mean that Defendants agree that any of the Asserted Patents are in fact entitled to such priority date, or that Plaintiff has provided proper notice as to its contentions for a priority date.[3] To the extent Plaintiff alleges that any prior art relied on in these Invalidity Contentions does not actually qualify as prior art to an Asserted Patent, Defendants reserve the right to rebut those allegations (e.g., by demonstrating an earlier critical date for the challenged prior art and/or a later priority date for a particular Asserted Patent and/or Asserted Claim).[4] Likewise, to the extent Plaintiff successfully establishes an invention date before any of the prior-art references relied on by Defendants, then those references serve as evidence of secondary considerations of obviousness, particularly, contemporaneous invention by others.

B.   Claim Construction

The Court entered its Claim Construction Order on May 27, 2021. Case No. 6:20-cv-00473-ADA, D.I. 94.[5] Defendants' Invalidity Contentions are based on (1) the Court's Claim Construction Order, (2) Defendants' present understanding of the Asserted Claims, and (2) the claim constructions Plaintiff appears to be using based on the Infringement Contentions, all without regard to whether Defendants agree with Plaintiff's apparent or expressed claim constructions. Defendants reserve the right to supplement or otherwise amend these Invalidity

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[3] Defendants reserve the right to rely on additional documents, evidence, and expert testimony, including without limitation the documents cited in Plaintiff's Infringement Contentions, in the event that Plaintiff fails to establish that any Asserted Claim of any Asserted Patent is entitled to its Asserted Priority Date.

[4] Defendants reserve the right to rely on additional documents and evidence to rebut any efforts by Plaintiff to allege any reference was not publicly available or otherwise available as prior art.

[5] The same Claim Construction Order has been entered in each of the above captioned cases.

Contentions in response to any court-ordered clarifications on claim constructions, any report from any expert witness for Plaintiff regarding the scope of the claims, any briefing filed by Plaintiff relating to the scope of the claims, and any position taken by Plaintiff concerning claim scope, infringement, or invalidity.

Defendants take no position on any matter of claim construction in these Invalidity Contentions, including whether any particular claim element should be construed according to 35 U.S.C. § 112, ¶ 6. If Defendants' disclosures herein are consistent with any explicit, apparent, or implied claim constructions in Plaintiff's Infringement Contentions, no inference is intended and no inference should be drawn that Defendants agree with any of Plaintiff's claim constructions. Any statement herein describing or tending to describe any claim element is provided solely for the purpose of understanding and/or applying the cited prior art. In addition, to the extent that these Invalidity Contentions rely on or otherwise embody a particular order in which the steps of method claims are performed, Defendants do not necessarily propose that the method claims must be limited to such order, although Defendants may later propose such an order.

Nothing herein should be read to suggest that Defendants agree that any particular claim term is sufficiently definite, enabled or supported by the written description to meet the requirements of 35 U.S.C. § 112. Likewise, nothing herein should be read to suggest that Defendants agree that the preamble of any claim is or is not limiting.

Because any positions taken in these disclosures are based on the claim scope apparently asserted by Plaintiff in its Preliminary Infringement Contentions, with which Defendants may disagree, Defendants may take positions with respect to claim construction issues that are inconsistent with, or even contradictory to, positions expressed or implied in these Invalidity Contentions.

Prior art not included in these Invalidity Contentions, whether or not now known to Defendants, might become relevant depending on the claim constructions proposed by Defendants and/or the Court's claim construction rulings. Defendants reserve all rights to supplement or modify the positions and information in these Invalidity Contentions, including, without limitation, the prior art and grounds of invalidity set forth herein, after the Court has construed the Asserted Claims.

C.   Ongoing Discovery and Supplementation

Defendants base these Invalidity Contentions on their current knowledge and understanding of the Asserted Patents, Plaintiff's Preliminary Infringement Contentions, and other facts and information available as of the date of these contentions. Defendants' investigation into prior art—including prior art identified in these disclosures, third-party prior art (including system art and related evidence), documents, and knowledgeable witnesses—is ongoing.[6] Furthermore, pursuant to the Court's Order Governing Proceedings, discovery did not begin until May 28, 2021. Defendants anticipate seeking and obtaining discovery, including third-party discovery, that further evidences and supports the invalidity of the Asserted Claims. Thus, Defendants expect to present additional information and evidence in support of their Invalidity Contentions, and to revise, amend, and/or supplement these Invalidity Contentions accordingly in a manner consistent

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[6] Defendants' ongoing efforts include but are not limited to: serving subpoenas on prior artists and inventors regarding prior art, seeking additional information related to the references and systems disclosed in these Invalidity Contentions, and seeking additional information related to available prior art systems, as well as Plaintiff's Infringement Contentions and the products accused of infringing therein. No depositions have been taken as of this time, including, without limitation, depositions of any inventors, authors, or entities listed on any references or systems identified in these Invalidity Contentions. Further, Defendants reserve the right to review and supplement these Invalidity Contentions with respect to any additional prior art that becomes apparent as discovery proceeds.

with the Federal Rules of Civil Procedure and the Court's rules and applicable orders. Defendants

provide below a list of outstanding third-party discovery requests relating to such information:

Letters Rogatory

- Nokia Canada Inc. (Case No. 6:20-cv-00474, -475, -478)

- Alcatel-Lucent International (Case No. 6:20-cv-00473, -475 to 479, -482)

- Karine Berthier, Director, Services / Applications & Analytics patent portfolio, Alcatel-Lucent International (Case No. 6:20-cv-00473, -474, -476)

- Emanuelle Wetzel, Director, Services / Applications & Analytics patent portfolio, Alcatel-Lucent International (Case No. 6:20-cv-00482)Nokia Technologies Oy (Case No. 6:20-cv-00475, -477 to 479)

- Nokia Solutions & Networks BV/Netherlands (Case No. 6:20-cv-00480, -485, -486)

- Boris Hristov (Case No. 6:20-cv-00475, -477 to 479)

- Oyen Wiggs Green & Mutala LLP (including Gavin N. Manning) (Case No. 6:20-cv-00474)

- Marks & Clerk (Case No. 6:20-cv-00475)

- Victoria Donnelly (Case No. 6:20-cv-00478)

- Blair T. Mackiewich (Case No. 6:20-cv-00474)

- Thomas Tadsen (Case No. 6:20-cv-00474)

- Yuming Wen (Case No. 6:20-cv-00474)

- Attaullah Zabihi (Case No. 6:20-cv-00475)

- Denis Armand Proulx (Case No. 6:20-cv-00475)

- Chong Ngoc Ngo (Case No. 6:20-cv-00475)

- Andre Neil Dominic Jacob (Case No. 6:20-cv-00475)

- Barry Ding Ken Mark (Case No. 6:20-cv-00478)

- Walter Joseph Carpini (Case No. 6:20-cv-00478)

- Moise Gaspard (Case No. 6:20-cv-00475)

- Imad Ansari (Case No. 6:20-cv-00475)

- Guillaume Ivaldi (Case No. 6:20-cv-00476)

- Christopher Öchsner (Case No. 6:20-cv-00482)

Subpoenas

- Nokia of America Corporation (Case No. 6:20-cv-0073, -477, -479)

- Bernard Zucker, General Counsel - Bell Labs and Special Projects at Nokia Bell Labs (Case No. 6:20-cv-00475, -477 to 479

- Elaine Drager, Head of IP and Asset Strategy, Nokia of America Corporation (Case No. 6:20-cv-00475, -477 to 479)

- Katharyn E. Olson, Director, Managing Corporate Counsel, and IP Legal, Nokia of America Corporation (Case No. 6:20-cv-00475, -477 to 479)

- Wade and Company (including Marc Wade) (Case No. 6:20-cv-0000475, -477 to 479)

- WCFT Cayman Ltd. (including Marc Wade) (Case No. 6:20-cv-00400475, -477 to 479)

- Orange Holdings (including Mark Wade) (Case No. 6:20-cv-00400475, -477 to 479)

- Chiesa Shahinian & Giantomasi PC (f/k/a Wolff & Samson PC) (including Richard A. Cheng) (Case No. 6:20-cv-00473)

- Law Office of William J. Tucker (Case No. 6:20-cv-00476)

- Garlick & Markison (including Jessica W. Smith) (Case No. 6:20-cv-00477)

- Eamon J. Wall (Case No. 6:20-cv-00479)

- Sughrue Mion, PLLC (including John H. Mion and Anthony T. Whittington) (Case No. 6:20-cv-00482)

Furthermore, Defendants are investigating and pursuing information from additional sources of discovery that may bear on prior art and other invalidity bases, and may serve discovery requests on those sources if necessary. Defendants reserve the right to revise, amend, and/or supplement these Invalidity Contentions with any relevant information obtained from those additional sources.

In addition, Defendants have requested that Plaintiff produce any relevant discovery that Plaintiff receives in related actions. See, e.g., 4/14/21 B. Rosenthal Letter; 6/7/21 B. Rosenthal Letter; Defendants' Requests for Production Nos. 14, 68, 69. As of the date of these Invalidity Contentions, Plaintiff has produced no such documents. Defendants reserve the right to rely on any documents or other information that Plaintiff produces in response to these requests, and to supplement these contentions with that information.

Defendants further reserve the right to rely on statements or admissions from those owing a duty of candor, such as named inventors, prosecution counsel, and others involved in the prosecution of the patent applications or related applications, concerning the scope of the prior art relevant to the Asserted Patents found in, *inter alia*, the following: the respective prosecution histories of the Asserted Patents and related patent applications; any deposition testimony of the named inventors; and the papers filed and any evidence submitted by Plaintiff in connection with this litigation.

Defendants reserve the right to modify and/or supplement these Invalidity Contentions with an explanation of why the Asserted Claims are invalid under 35 U.S.C. §§ 102(f)-(g), in the event Defendants obtain additional evidence that the named inventors did not invent (either alone or in conjunction with others) the subject matter claimed or that the claimed subject matter was invented by others. Should Defendants obtain such evidence, they will provide the name of the person(s) from whom and the circumstances under which the invention or any part of it was derived or the name of the person(s) that invented such subject matter and the circumstances of such invention.

Prior art not identified in this disclosure, whether known or not known to Defendants, may become relevant, including prior art concerning the state of the art at the time of invention, as well as simultaneous or near-simultaneous independent invention by others. For instance, Defendants

currently are unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the prior art identified by Defendants. To the extent that such an issue arises, Defendants reserve the right to identify other references that would disclose, practice, or render obvious the allegedly missing limitation(s) of the disclosed subject matter.

D.   Prior Art Identification and Citations Thereto

In these Invalidity Contentions, Defendants identify specific portions of prior art references that disclose the elements of the Asserted Claims. While Defendants have identified exemplary prior art references for each element, they do not necessarily identify every disclosure of the same element in each prior art reference. A person of ordinary skill in the art would read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field and would rely upon other information including other publications and general scientific or engineering knowledge. Defendants therefore reserve the right to rely upon other unidentified portions of the prior art references and on other publications and prior art products and expert testimony to provide context and to aid understanding and interpretation of the identified portions of the prior art.

Defendants also reserve the right to rely upon (1) other portions of the cited prior art references, other publications, prior art products, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art, including on the basis of modifying or combining certain cited references; (2) admissions relating to prior art in the Asserted Patents or related patents, the prosecution history of the Asserted Patents or related patents, or other admissions obtained during discovery; (3) foreign counterparts of any U.S. patents identified in Defendants' Invalidity Contentions; and (4) any prior art references, other publications, prior art products, and the testimony of experts to establish that the alleged inventions would have been obvious to a person of ordinary skill in the art used during any reexamination,

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inter partes review, post-grant review, or any other proceeding at the Patent Office involving the Asserted Patents. Where a prior art reference includes citations to other references, those other references are considered incorporated by reference for context.

The references discussed in the claim charts may disclose the elements of the Asserted Claims explicitly and/or inherently, and/or they may be relied upon to show the state of the art in the relevant time frame. The suggested obviousness combinations are provided in the alternative to Defendants' anticipation contentions and are not to be construed to suggest that any reference included in the combinations is not by itself anticipatory.

Where Defendants identify in the claim charts a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure as well as any text relating to the figure in the specification and prosecution history in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well.

E.   No Patentable Weight

Defendants reserve the right to argue that various portions of the Asserted Claims, such as an intended use or result, non-functional descriptive material, and certain preamble language, are entitled to no patentable weight. Mapping of a portion of an Asserted Claim to a prior art reference does not represent that such portion of the claim is entitled to patentable weight when comparing the claimed subject matter to the prior art.

* * *

Nothing herein should be read to suggest that Defendants agree that any particular claim term is sufficiently definite, enabled or supported by the written description to meet the requirements of 35 U.S.C. § 112. In addition, nothing herein admits in any way that any of Defendants' accused products or services infringe any of the Asserted Claims. Defendants reserve

the right to amend and supplement these Invalidity Contentions, including in response to any amendments to, and revisions of, Plaintiff's Preliminary Infringement Contentions or application of the Asserted Claims. Defendants further reserve the right to supplement their corresponding document production should they later find additional, responsive documents.

II.   INVALIDITY UNDER 35 U.S.C. §§ 102 AND 103

Defendants contend that the Asserted Claims are invalid as anticipated by the prior art under 35 U.S.C. § 102 and/or as obvious in view of the prior art, the knowledge of a person having ordinary skill in the art, and/or secondary factors of obviousness under 35 U.S.C. § 103.

The obviousness combinations of references provided in Defendants' invalidity claim charts under 35 U.S.C. § 103 are exemplary and are not intended to be exhaustive. In particular, Defendants are currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the art identified by Defendants as anticipatory. To the extent an issue arises with any such limitation, Defendants will identify other obviousness combinations and/or other references that would have made obvious the addition of the allegedly missing limitation to the disclosed device, system, or method of operation.

Pursuant to the Order Governing Proceedings, discovery did not begin until May 28, 2021. Defendants' prior art investigation and third-party discovery is therefore not yet complete. Defendants reserve the right to present additional items of prior art under 35 U.S.C. § 102 and/or 35 U.S.C. § 103 located during the course of discovery or further investigation. For example, Defendants expect to issue subpoenas to third parties believed to have knowledge, documentation, and/or corroborating evidence concerning some of the prior art listed below and/or additional prior art. These third parties include without limitation the authors, inventors, or assignees of the references listed in these disclosures. In addition, Defendants reserve the right to

assert invalidity under other subsections of 35 U.S.C. § 102 to the extent that discovery or further investigation yield information forming the basis for such invalidity.

A patentee bears the burden of production with respect to evidence of secondary considerations of non-obviousness. *ZUP, LLC v. Nash Mfg., Inc.*, 896 F.3d 1365, 1373 (Fed. Cir. 2018). As of the date of these Invalidity Contentions, Plaintiff has not identified any evidence of secondary considerations, nor does Plaintiff offer any evidence or explanation to support its allegations. As shown in these Invalidity Contentions, other companies and individuals described, built, and/or patented the exact same concepts in the Asserted Patents before Plaintiff ever did— often many years before. Even where others' invention(s) occurred around the same time as the Asserted Patents, such simultaneous invention demonstrates the obviousness of the Asserted Patents.

Potentially relevant evidence includes any prior art reference cited herein that was publicly known or available before or around the alleged inventions claimed in the Asserted Patents. This also includes any prior art asserted in these Invalidity Contentions that Plaintiff is able to pre-date based on its asserted priority dates by proving, *inter alia*, corroborated conception and diligent reduction to practice.

Defendants reserve all rights to further respond to any secondary considerations of nonobviousness raised by Plaintiff, including by updating, modifying, and/or adding to these Invalidity Contentions. Defendants are not aware of any unexpected results (none is mentioned in the Asserted Patents or their file histories), long-felt need, commercial success (or any nexus to any allegedly successful commercial embodiment), or awards for the alleged inventions of the Asserted Patents.

A.   State of the Art

The subject matter of the Asserted Claims was well understood to those of skill in the art

as of the respective priority dates of the Asserted Patents. To describe the state of the art at the

time of the alleged inventions, in addition to the references listed on the face of the Asserted Patents

and those references listed in Section B and charted in Exhibits A-1–H-11, Defendants may rely

on at least the references listed below and any admitted prior art discussed in the Asserted Patent

and file histories:

1.   U.S. Patent No. 7,126,921

- Bradley Cain, *Fast link state flooding*, Globecom '00 - IEEE. Global Telecommunications Conference. Conference Record (Cat. No.00CH37137) (Dec. 2000) ("Cain IEEE")

- CA2310524 to Fedyk et al. ("Fedyk")

- CA2311197 to Cottreau et al. ("Cottreau")

- CA2374621 to Ricciulli ("Ricciulli")

- D.E. Comer, et al., *High-speed propagation of link status routing control information*, Proceedings of the Second IEEE Symposium on Parallel and Distributed Processing 1990 (Dec. 1990)

- J. Moy, *Hitless OSPF Restart draft-ietf-ospf-hitless-restart-00.txt*, IETF Network Working Group ("Hitless OSPF Restart Feb. 2001")

- J. Moy, *Hitless OSPF Restart draft-ietf-ospf-hitless-restart-01.txt*, IETF Network Working Group ("Hitless OSPF Restart Aug. 2001")

- Shree Murthy, *Routing in Packet-Switched Networks Using Path-Finding Algorithms*, University of California Santa Cruz (1996)

- U.S. Patent No. 5,065,399 to Hasegawa et al. ("Hasegawa")

- U.S. Patent No. 5,265,092 to Soloway et al. ("Soloway")

- U.S. Patent No. 5,654,958 to Natarajan ("Natarajan")

- U.S. Patent No. 5,825,772 to Dobbins et al. ("Dobbins")

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- U.S. Patent No. 5,903,545 to Sabourin ("Sabourin")

- U.S. Patent No. 5,917,820 to Rekhter ("Rekhter")

- U.S. Patent No. 6,301,252 to Rangachar ("Rangachar")

- U.S. Patent No. 6,349,091 to Li ("Li '091")

- U.S. Patent No. 6,385,174 to Li ("Li '174")

- U.S. Patent No. 6,606,325 to Cain ("Cain '325"); U.S. Patent No. 6,650,626 to Cain ("Cain '626"); U.S. Patent No. 6,871,235 to Cain ("Cain '235"); U.S. Patent No. 6,928,483 to Cain ("Cain '483") (collectively the "Cain Disclosure")

- U.S. Patent No. 6,667,957 to Corson et al. ("Corson")

- U.S. Patent No. 6,680,934 to Cain ("Cain '934")

- U.S. Patent No. 6,892,329 to Bruckman ("Bruckman")

- U.S. Patent No. 6,917,983 to Li ("Li '983")

- U.S. Patent No. 6,980,537 to Liu ("Liu")

- U.S. Patent No. 6,985,959 to Lee ("Lee")

- U.S. Patent No. 6,992,978 to Humblet et al. ("Humblet")

- U.S. Patent No. 7,058,016 to Harper ("Harper")

- U.S. Patent No. 7,593,321 to Galand et al. ("Galand")

- U.S. Patent Pub. No. 2001/0034853 to Takatama et al. ("Takatama")

- U.S. Patent Pub. No. 2002/0029287 to Yemini et al. ("Yemini")

- U.S. Patent Pub. No. 2002/0062388 to Ogier et al. ("Ogier")

- U.S. Patent Pub. No. 2002/0114272 to Stewart ("Stewart")

- U.S. Patent Pub. No. 2002/0131362 to Callon ("Callon")

- U.S. Patent Pub. No. 2003/0031126 to Mayweather et al. ("Mayweather")

2. **U.S. Patent No. 7,212,536**

- U.S. Patent No. 7,869,425 to Elliott et al. ("Elliott")

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- U.S. Patent No. 6,917,614 Laubach et al. ("Laubach")

- U.S. Patent No. 5,850,395 to Hauser et al. ("Hauser")

- U.S. Patent No. 7,961,727 to Duncan et al. ("Duncan")

- U.S. Patent No. 6,470,025 to Wilson et al. ("Wilson")

- U.S. Patent Pub. No. 2002/0080808 to Leung ("Leung")

- U.S. Patent No. 6,430,188 to Kadambi et al. ("Kadambi")

- U.S. Patent No. 6,459,698 to Acharya ("Acharya")

- U.S. Patent No. 7,039,057 to Acharya et al. ("Acharya II")

- U.S. Patent No. 7,292,577 to Ginipalli ("Ginipalli")

- U.S. Patent No. 7,150,021 to Vajjhala et al. ("Vajjjhala")

- U.S. Patent Pub. No. 2002/0196737 to Bullard ("Bullard")

- U.S. Patent No. 6,639,901 to Katzri et al. ("Katzri")

- U.S. Patent No. 5,610,913 to Tomonaga et al. ("Tomanaga")

- U.S. Patent No. 5,491,691 to Shtayer et al. ("Shtayer")

- WO 2001/065783 to Sydhoff et al. ("Sydhoff")

- U.S. Patent No. 6,104,696 to Kadambi et al. ("Kadambi")

- WO 2000/014928 to Jennings ("Jennings")

- WO 2000/051290 to Rao et al. ("Rao")

- CA 2217315 to Proulx et al. ("Proulx")

- IEEE 802.1D (1998)

- IEEE 802.1Q (1998)

- RFC 791, Internet Protocol (September 1981)

- RFC 793, Transmission Control Protocol (September 1981)

- INFO Brief Dell PowerConnect 5012 (September 2001)

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- Introduction to InfiniBand, White Paper, Mellanox Technologies (2010)

- Introduction to InfiniBand for End Users, Paul Grun (2010).

- A Framework for Integrated Services Ove Shared and Switched IEEE 802 LAN Technologies, Ghanwani et al. (May 2000)

- The UPSTREAMS Protocol for HFC Networks, Laubach (June 23 1997)

- QoS Paramters in IP and ATM and How IP Maps onto ATM, Singh (May 1999)

- ATM Internetworking, Alles (1995)

- Media Access Control Protocol Based on DOCSIS 1.1, IEEE (December 24, 1999)

3.   **U.S. Patent No. 7,424,020**

- IEEE 802.3u-1995

- U.S. Patent No. 6,078,957 to Adelman et al. ("Adelman")

- U.S. Patent No. 6,996,631 to Aiken et al. ("Aiken")

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8. **U.S. Patent No. 9,137,144**

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B.   Identification of Prior Art

Defendants identify the following prior art now known to Defendants that anticipates or renders obvious one or more of the Asserted Claims. Each of the following patents, publications, systems, and products is prior art under at least one or more of 35 U.S.C. §§ 102(a), (b), (e), (f), or (g) (pre-AIA) or § 102(a) (post-AIA), as applicable. Defendants' reliance on each prior art reference identified throughout these Invalidity Contentions includes the reference itself, anything incorporated by the reference, and any testimony by those with knowledge of the reference, such as named authors and inventors. On information and belief, each listed document or item became prior art at least as early as the dates specified.

To the extent any limitation of any of the Asserted Claims is construed to have a similar meaning, or to encompass similar feature(s) and/or function(s), with any other claim limitation, and to the extent at least one claim chart in Exhibit A-1–H-11 hereto identifies any prior art reference as disclosing or teaching such similarly construed claim limitation, such identified prior art reference and Defendants' contentions with respect to same, are incorporated by reference. Priority dates identified for the prior art references are based on information currently available to Defendants, and Defendants will amend this disclosure to the extent additional information becomes available.

To the extent that they are prior art, Defendants reserve the right to rely upon (1) foreign counterparts of the U.S. Patents identified in Defendants' Invalidity Contentions, (2) U.S. counterparts of foreign patents and foreign patent applications identified in Defendants' Invalidity Contentions, and (3) U.S. and foreign patents and patent applications corresponding to articles and publications identified in Defendants' Invalidity Contentions.

The prior art identified below is exemplary; the claimed features are similarly described or disclosed in additional prior art. Thus, Defendants reserve the right to rely on other evidence of

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the prior art beyond the example references identified, including the prior art identified in Section III.A.

The primary references identified below, and as further described in Exhibits A-1–H-11, each discloses, either expressly or inherently, every element of the Asserted Claims, thereby anticipating those claims. To the extent Plaintiff contends that any primary reference does not anticipate the Asserted Claims, it would have been obvious to combine or modify the primary references with concepts from other prior art, as explained herein and in Appendices A–H.

In particular, for each limitation of the Asserted Claims that Plaintiff contends is not met by a particular primary reference, Defendants contend that the limitation (and claim as a whole) is obvious based on a combination of that particular primary reference with (1) any other primary reference disclosing that limitation, (2) any admitted prior art, as explained in the background of each patent or discussed in the file history, (3) any reference identified in Appendices A–H as disclosing that limitation, and/or (4) the knowledge of a person of ordinary skill in the art and/or any of the references and concepts discussed herein regarding the relevant background and state of the art. The specific combinations of prior art that Defendants contend render the Asserted Claims obvious are readily determinable as described herein, which is the most efficient manner of identifying the combinations in light of the fact that Plaintiff has asserted 170 claims across 12 patents.[7] Defendants' obviousness grounds for each dependent claim incorporate the obviousness grounds for the claim(s) from which the dependent claim depends in addition to any obviousness grounds identified in the charts for the dependent claim.

Defendants do not yet have the benefit of Plaintiff's positions on the prior art, including what (if any) elements it contends are missing in each prior art reference, whether Plaintiff agrees

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[7]   The other four cases are 6:20-cv-00480, 6:20-cv-00481, 6:20-cv-00485, 6:20-cv-00486.

that a reference is in fact prior art, and whether Plaintiff agrees that a person of ordinary skill in the art would be motivated to combine specific references. Defendants reserve the right to supplement these obviousness positions (including identifying additional prior art combinations and the associated reasons to combine) as discovery in the case progresses, including expert discovery.

1.   U.S. Patent No. 7,126,921

a)   Prior Art Patents / Patent Publications

- U.S. Patent No. 5,265,092 to Soloway et al. ("Soloway")

- U.S. Patent No. 5,654,958 to Natarajan ("Natarajan")

- U.S. Patent No. 6,301,252 to Rangachar ("Rangachar")

- U.S. Patent No. 6,349,091 to Li ("Li '091")

- U.S. Patent No. 6,385,174 to Li ("Li '174")

- U.S. Patent No. 6,606,325 to Cain ("Cain '325"); U.S. Patent No. 6,650,626 to Cain ("Cain '626"); U.S. Patent No. 6,871,235 to Cain ("Cain '235"); U.S. Patent No. 6,928,483 to Cain ("Cain '483") (collectively the "Cain Disclosure")

- U.S. Patent No. 6,892,329 to Bruckman ("Bruckman")

- U.S. Patent No. 6,985,959 to Lee ("Lee")

- U.S. Patent No. 6,992,978 to Humblet et al. ("Humblet")

- U.S. Patent No. 7,593,321 to Galand et al. ("Galand")

- U.S. Patent Pub. No. 2003/0031126 to Mayweather et al. ("Mayweather")

b)   Prior Art Publications

- J. Moy, *Hitless OSPF Restart draft-ietf-ospf-hitless-restart-00.txt*, IETF Network Working Group ("Hitless OSPF Restart Feb. 2001")

- J. Moy, *Hitless OSPF Restart draft-ietf-ospf-hitless-restart-01.txt*, IETF Network Working Group ("Hitless OSPF Restart Aug. 2001")

- Bradley Cain, *Fast link state flooding*, Globecom '00 - IEEE. Global Telecommunications Conference. Conference Record (Cat. No.00CH37137) (Dec. 2000) ("Cain IEEE")

c)   Prior Invention Under § 102(g)

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '921 patent prior to the filing date of the '921 patent, and discovery has not yet begun and Defendants will supplement as discovery commences.

d)   Obviousness and Secondary References

Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

- Bradley Cain, *Fast link state flooding*, Globecom '00 - IEEE. Global Telecommunications Conference. Conference Record (Cat. No.00CH37137) (Dec. 2000) ("Cain IEEE")

- J. Moy, *Hitless OSPF Restart draft-ietf-ospf-hitless-restart-00.txt*, IETF Network Working Group ("Hitless OSPF Restart Feb. 2001")

- J. Moy, *Hitless OSPF Restart draft-ietf-ospf-hitless-restart-01.txt*, IETF Network Working Group ("Hitless OSPF Restart Aug. 2001")

- U.S. Patent No. 5,265,092 to Soloway et al. ("Soloway")

- U.S. Patent No. 5,654,958 to Natarajan ("Natarajan")

- U.S. Patent No. 6,301,252 to Rangachar ("Rangachar")

- U.S. Patent No. 6,349,091 to Li ("Li '091")

- U.S. Patent No. 6,385,174 to Li ("Li '174")

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- U.S. Patent No. 6,606,325 to Cain ("Cain '325"); U.S. Patent No. 6,650,626 to Cain ("Cain '626"); U.S. Patent No. 6,871,235 to Cain ("Cain '235"); U.S. Patent No. 6,928,483 to Cain ("Cain '483") (collectively the "Cain Disclosure")

- U.S. Patent No. 6,892,329 to Bruckman ("Bruckman")

- U.S. Patent No. 6,985,959 to Lee ("Lee")

- U.S. Patent No. 6,992,978 to Humblet et al. ("Humblet")

- U.S. Patent No. 7,593,321 to Galand et al. ("Galand")

- U.S. Patent Pub. No. 2003/0031126 to Mayweather et al. ("Mayweather")

2.   **U.S. Patent No. 7,212,536**

a)   **Prior Art Patents / Patent Publications**

- U.S. Patent No. 6,459,698 to Acharya ("Acharya")

- U.S. Patent Pub. No. 2002/0196737 to Bullard ("Bullard")

- U.S. Patent No. 7,292,577 to Ginipalli ("Ginipalli")

- U.S. Patent No. 5,850,395 to Hauser et al. ("Hauser")

- U.S. Patent No. 6,639,901 to Katzri et al. ("Katzri")

- WO 2000/051290 to Rao et al. ("Rao")

- U.S. Patent No. 5,491,691 to Shtayer et al. ("Shtayer")

- U.S. Patent No. 5,610,913 to Tomonaga et al. ("Tomanaga")

- U.S. Patent No. 7,150,021 to Vajjhala et al. ("Vajjjhala")

- U.S. Patent No. 7,039,057 to Acharya et al. ("Acharya II")

- U.S. Patent No. 5,485,455 to Dobbins et al. ("Dobbins")

- U.S. Patent No. 5,933,425 to Iwata ("Iwata")

b)   **Prior Art Publications**

- IEEE 802.1Q (1998)

- Support QoS in IP over ATM, G. Lai et al., May 27, 1998 ("Lai")

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c)   **Prior Invention Under § 102(g)**

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '536 patent prior to the filing date of the '536 patent, and discovery has not yet begun and Defendants will supplement as discovery commences.

d)   **Obviousness and Secondary References**

Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

- U.S. Patent No. 7,869,425 to Elliott et al. ("Elliott")
- U.S. Patent No. 6,917,614 Laubach et al. ("Laubach")
- U.S. Patent No. 7,961,727 to Duncan et al. ("Duncan")
- U.S. Patent No. 6,470,025 to Wilson et al. ("Wilson")
- U.S. Patent Pub. No. 2002/0080808 to Leung ("Leung")
- U.S. Patent No. 6,430,188 to Kadambi et al. ("Kadambi")
- WO 2001/065783 to Sydhoff et al. ("Sydhoff")
- U.S. Patent No. 6,104,696 to Kadambi et al. ("Kadambi")
- WO 2000/014928 to Jennings ("Jennings")
- CA 2217315 to Proulx et al. ("Proulx")
- IEEE 802.1D (1998)
- RFC 791, Internet Protocol (September 1981)

- RFC 793, Transmission Control Protocol (September 1981)

- INFO Brief Dell PowerConnect 5012 (September 2001)

- A Quality of Service Architecture, A. Campbell et al., April 1, 1994 ("Cambell")

- Space Priority Management in Shared Memory ATM Switch, A. Chaoudhury et al., 1993 ("Choudhury")

- Data Transfer for HIPERLAN, P. Jacquet, 1996 ("Jacquet")

- Priority Queueing Strategies and Buffer Allocation Protocols for Traffic Control at an ATM Integrated Broadband Switching System, A. Lin, December 1991 ("Lin")

3.   U.S. Patent No. 7,424,020

a)   Prior Art Patents / Patent Publications

- U.S. Patent No. 6,115,394 to Balachandran et al. ("Balachandran")

- U.S. Patent No. 6,608,841 to Koodli ("Koodli")

- U.S. Patent No. 6,400,730 to Latif et al. ("Latif")

- U.S. Patent Pub. No. 2003/0093567 to Lolayekar et al. ("Lolayekar")

- U.S. Patent No. 6,055,236 to Nessett et al. ("Nessett")

- U.S. Patent No. 7,424,012 to Tzeng ("Tzeng")

- U.S. Patent No. 7,031,325 to Williams ("Williams")

b)   Prior Art Publications

- Martin W. Murhammer, IP Network Design Guide, IBM (June 1999) ("IBM IP Network Design Guide")

c)   Prior Invention Under § 102(g)

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '435 patent prior to the filing date of the '435 patent. Discovery has not yet begun and Defendants reserve the right to supplement as discovery commences.

d)   Obviousness and Secondary References

Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

- IEEE 802.3u-1995

- U.S. Patent No. 6,078,957 to Adelman et al. ("Adelman")

- U.S. Patent Pub. No. 2001/0047433 to Boucher et al. ("Boucher")

- Anshul Chadda, Design, Implementation, and Performance Analysis of Session Layer Protocols for SCSI over TCP/IP (August 2001) ("Chadda")

- U.S. Patent Pub. No. 2004/0148425 to Haumont et al. ("Haumont")

- EP 1,137,238 to Koo et al. ("Koo")

- U.S. Patent No. 6,856,591 to Ma et al. ("Ma")

- RFC 2507 – IP Header Compression (February 1999)

- RFC 3022 – Traditional IP Network Address Translator (Traditional NAT) (January 2001)

- Niraj Shah, Understanding Network Processors, (September 4, 2001) ("Shah")

- Daniel Zinca et al, Performance Evaluation of Layer 4 Switching in IPv6 versus IPv4 Acta Technica Napocensis (2001) ("Zinca")

4.   U.S. Patent No. 7,453,888

a)   Prior Art Patents / Patent Publications

- U.S. Patent No. 5,394,402 to Ross ("Ross")

- U.S. Patent No. 5,878,232 to Marimuthu ("Marimuthu")

- U.S. Patent No. 5,892,912 to Suzuki et al. ("Suzuki")

- U.S. Patent No. 6,032,194 to Gai et al. ("Gai '194")

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- U.S. Patent No. 6,041,057 to Stone ("Stone")

- U.S. Patent No. 6,104,696 to Kadambi et al. ("Kadambi")

- U.S. Patent No. 6,515,969 to Smith ("Smith")

- U.S. Patent No. 6,678,241 to Gai et al. ("Gai '241")

- U.S. Patent No. 6,839,348 to Tang et. al. ("Tang")

- U.S. Patent Pub. No. 2001/0025318 to Higashiyama ("Higashiyama")

b)   **Prior Art Publications**

- Avaya, *User's Guide Avaya P333t Stackable Switch Software Version 3.3*, Avaya (June 2001) ("Avaya P333T Manual 3.3")

- Avaya, *User's Guide Avaya P333t Stackable Switch Software Version 3.8*, Avaya (February 2002) ("Avaya P333T Manual 3.8")

- Cisco Systems, Inc., *Catalyst 6000 Family Software Configuration Guide Software Release 6.1* , Cisco Systems, Inc. (2000) ("Cisco 6000 Manual")

- Hewlett-Packard Company, *Advanced Configuration and Management Guide for the HP ProCurve Routing Switches 9304M, 9308M, 6308M-SX and the HP ProCurve Switch (software release 6.6.x and 7.1.x)*, Hewlett-Packard Company (December 2000) ("HP ProCurve Manual")

- IEEE 802.1Q (1998)

- Kennedy Clark et al., *Cisco LAN Switching*, Cisco Press (August 26, 1999) ("Cisco LAN Switching")

- Riverstone Networks, Inc., *RS Switch Router User Guide Release 7.0*, Riverstone Networks, Inc. (2001) ("Riverstone Manual") (2001)

c)   **Prior Art Systems**

Defendants identify the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of this patent. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was

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invented and not abandoned, suppressed, or concealed prior to the alleged invention of the patent-in-suit. Defendants reserve the right to rely on the below systems themselves as prior art, as well as any of the references describing these systems individually or in any combination, as well as testimony from any inventor or developer of these systems.

- Avaya P333t Stackable Switch (2001) ("Avaya P333T Stack")

- Catalyst 6000 Family Switches (1999) ("Cisco 6000 Switches")

- HP ProCurve Routing Switches 9304M, 9308M, 6308M-SX and the HP ProCurve Switch (2000) ("HP ProCurve Switches")

- RS Switch Router Software (2001) ("Riverstone Software")

d)   Prior Invention Under § 102(g)

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '888 patent prior to the filing date of the '888 patent. Discovery has not yet begun and Defendants reserve the right to supplement as discovery commences.

e)   Obviousness and Secondary References

Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

- Avaya P333t Stackable Switch (2001) ("Avaya P333T Stack")

- Avaya, *User's Guide Avaya P333t Stackable Switch Software Version 3.3*, Avaya (June 2001) ("Avaya P333T Manual 3.3")

- Avaya, *User's Guide Avaya P333t Stackable Switch Software Version 3.8*, Avaya (February 2002) ("Avaya P333T Manual 3.8")

- Catalyst 6000 Family Switches (1999) ("Cisco 6000 Switches")

- Cisco Systems, Inc., *Catalyst 6000 Family Software Configuration Guide Software Release 6.1* , Cisco Systems, Inc. (2000) ("Cisco 6000 Manual")

- Hewlett-Packard Company, *Advanced Configuration and Management Guide for the HP ProCurve Routing Switches 9304M, 9308M, 6308M-SX and the HP ProCurve Switch (software release 6.6.x and 7.1.x)*, Hewlett-Packard Company (December 2000) ("HP ProCurve Manual")

- HP ProCurve Routing Switches 9304M, 9308M, 6308M-SX and the HP ProCurve Switch (2000) ("HP ProCurve Switches")

- IEEE 802.1Q (1998)

- Kennedy Clark et al., *Cisco LAN Switching*, Cisco Press (August 26, 1999) ("Cisco LAN Switching")

- Riverstone Networks, Inc., *RS Switch Router User Guide Release 7.0*, Riverstone Networks, Inc. (2001) ("Riverstone Manual") (2001)

- RS Switch Router Software (2001) ("Riverstone Software")

- U.S. Patent No. 5,394,402 to Ross ("Ross")

- U.S. Patent No. 5,878,232 to Marimuthu ("Marimuthu")

- U.S. Patent No. 5,892,912 to Suzuki et al. ("Suzuki")

- U.S. Patent No. 6,032,194 to Gai et al. ("Gai '194")

- U.S. Patent No. 6,041,057 to Stone ("Stone")

- U.S. Patent No. 6,104,696 to Kadambi et al. ("Kadambi")

- U.S. Patent No. 6,515,969 to Smith ("Smith")

- U.S. Patent No. 6,678,241 to Gai et al. ("Gai '241")

- U.S. Patent No. 6,839,348 to Tang et. al. ("Tang")

- U.S. Patent Pub. No. 2001/0025318 to Higashiyama ("Higashiyama")

5.   **U.S. Patent No. 7,565,435**

a)   **Prior Art Publications**

- 3com SuperStack 3 Switch 4200 Series (November 2002)

- 3com SuperStack 3 Switch 4900 Series (November 2002)

- 3com Switch 3812 and Switch 3824 Implementation Guide (May 2003)

- Catalyst 3750 Switch Software Configuration Guide and Catalyst 3750 Switch Command Reference (July 2003)

- Catalyst 6500 Series Cisco IOS Software Configuration Guide, 12.2 SX (October 2003)

- IEEE 802.1Q (May 7, 2003)

- Installation and Basic Configuration Guide for the HP ProCurve Routing Switches (September 2003)

- Kennedy Clark, Cisco LAN Switching (August 26, 1999)

- TigerSwitch 10/100/1000 Management Guide (October 2003)

- Wanyi Gu, *Metro and Access Networks II*, Proceedings of SPIE (October 2002)

b)   **Prior Art Systems**

Defendants identify the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of this patent. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the patent-in-suit. Defendants reserve the right to rely on the below systems themselves as prior art, as well as any of the references describing these systems individually or in any combination, as well as testimony from any inventor or developer of these systems.

- 3com SuperStack 3 Switch 4200 Series

- 3com SuperStack 3 Switch 4900 Series

- 3com Switch 3812 and Switch 3824

- Catalyst 3750

- Catalyst 6500

- HP ProCurve Routing Switches 9304M, 9308M, and 9315M

- TigerSwitch 10/100/1000

c)   **Prior Invention Under § 102(g)**

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '435 patent prior to the filing date of the '435 patent. Discovery has not yet begun and Defendants reserve the right to supplement as discovery commences.

d)   **Obviousness and Secondary References**

Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

- U.S. Patent Pub. No. 2003/0169694 to Seaman ("Seaman II")

- U.S. Patent No. 6,515,969 to Smith ("Smith")

- Seth Atkins, IBM eserver BladeCenter Networking Options (July 2003)

- Allied Telesyn User's Guide for the AT-8326GB Fast Ethernet Switch (2003)

- Cisco AVVID Network Infrastructure: Implementing 802.1w and 802.1s in Campus Networks (April 2003)

- David Stott, Layer-2 Path Discovery Using Spanning Tree MIBs (March 7, 2002)

- Radia Perlman, Interconnections: Bridges, Routers, Switches, and Internetworking Protocols (2000)

6.   U.S. Patent No. 8,402,129

a)   Prior Art Patents / Patent Publications

- U.S. Patent No. 6,115,393 to Engel et al. ("Engel")

- U.S. Patent No. 5,751,964 to Ordanic et al. ("Ordanic")

- JPH10161986 to Yohimasa et al. ("Yohimasa")

- JPH07104842 to Yasuo et al. ("Yasuo 842")

- U.S. Patent No. 5,955,946 to Beheshti et al. ("Beheshti")

- U.S. Patent No. 6,122,664 to Boukobza et al. ("Boukobza")

- U.S. Patent No. 6,597,777 to Ho et al. ("Ho")

b)   Prior Art Publications

- Martin Gunnarsson, *Automated Testing of SNMP Controlled Equipment*, Erricson Telecom AB Master's Project Report (June 24, 1999)

- Joseph Barrus, A Distributed Autonomous-Agent Network-Intrusion Detection and Response System, Command and Control Research and Technology Symposium (June 1998).

- Wilmer Caripe, Network Awareness and Mobile Agent Systems, IEEE Communications Magazine (July 1998).

c)   Prior Invention Under § 102(g)

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the 129' patent prior to the filing date of the '129 patent, and discovery has not yet begun and Defendants will supplement as discovery commences.

d)   Obviousness and Secondary References

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Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

- U.S. Patent No. 6,160,999 to Chheda et al. ("Chheda")

- U.S. Patent No. 6,115,393 to Engel et al. ("Engel")

- U.S. Patent No. 4,654,806 to Poyser et al. ("Poyser")

- U.S. Patent No. 7,043,231 to Bhatia et al. ("Bhatia")

- U.S. Patent No. 6,748,445 to Darcy et al. ("Darcy")

- U.S. Patent No. 6,067,460 to Alanara et al. ("Alanara")

- U.S. Patent No. 4,065,758 to Barbier et al. ("Barbier")

- U.S. Patent No. 3,305,786 to Smith et al. ("Smith")

- U.S. Patent No. 6,222,547 to Schwuttke et al. ("Schwuttke")

- Seetharaman Balasubramanian, An Architecture for Protection of Network Hosts from Denial of Service Attacks, Thesis University of Florida (2000).

- Andreas Pistillides, Effective Control of Traffic Flow in ATM Networks Using Fuzzy Explicit Rate marking (FERM), Journal on Selected Areas in Communications, Vol 15. No. 2. (February 1997).

7.   U.S. Patent No. 8,913,489

a)   Prior Art Patents / Patent Publications

- U.S. Patent Pub. No. 2013/0077471 to Assarpour ("Assarpour")

- U.S. Patent No. 8,724,517 to Bulusu et al. ("Bulusu")

- U.S. Patent No. 7,599,284 to Di Benedetto ("Di Benedetto")

- U.S. Patent Pub. No. 2010/0189117 to Gowda et al. ("Gowda")

- U.S. Patent No. 8,730,963 to Grosser et al. ("Grosser")

- EP2255501 to Khan et al. ("Khan")

- U.S. Patent No. 7,173,934 to Lapuh et al. ("Lapuh")

- U.S. Patent No 7,463,579 to Lapuh et al. ("Lapuh II")

- U.S. Patent Pub. No. 2012/0002534 to Lissianoi ("Lissianoi")

- U.S. Patent Pub. No. 2008/68985 to Mieno ("Mieno")

- U.S. Patent No. 7.639,605 to Narayanan et al. ("Narayanan")

- U.S. Patent Pub. No. 2010/329110 to Rose et al. ("Rose")

- U.S. Patent No. 8,204,061 to Sane et al. ("Sane")

- U.S. Patent Pub. No. 2005/63395 to Smith et al. ("Smith")

- U.S. Patent Pub. No. 2013/0100854 to Tatikonda et al. ("Tatikonda")

- U.S. Patent Pub. No. 2008/0205408 to Wakumoto ("Wakumoto")

- U.S. Patent No. 8,902,734 to Wang et al. ("Wang")

b)   **Prior Art Publications**

- Cisco NX-OS Software Virtual PortChannel: Fundamental Concepts (2010)

c)   **Prior Art Systems**

Defendants identify the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of this patent. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the patent-in-suit. Defendants reserve the right to rely on the below systems themselves as prior art, as well

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as any of the references describing these systems individually or in any combination, as well as testimony from any inventor or developer of these systems.

- Cisco NX-OS (2010)

- Cisco Multichassis Etherchannel (2010)

- Cisco Cross-stack Etherchannel (2010)

- Cisco Stackwise Virtual (2010)

- Cisco Virtual Port Channel (2010)

- HP ProCurve (2009)

- Avaya Ethernet Routing Switch (2010)

- Nortel Ethernet Switch 325, 425, 460, 470 and/or Ethernet Routing Switch 1600, 2500, 4500, 5500, 8300, 8600 (2008)

- Brocade MLX series (2010)

d) **Prior Invention Under § 102(g)**

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '489 patent prior to the filing date of the '489 patent, and discovery has not yet begun and Defendants will supplement as discovery commences.

e) **Obviousness and Secondary References**

Defendants identify each of the references listed above as primary references that render this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill in the art. In addition, these primary references may be combined with each other or with the secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of ordinary skill in the art would be motivated to combine these references as explained in Section III.D:

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- U.S. Patent Pub. No. 2005/0063395 to Smith et al. ("Smith")

- U.S. Patent No. 5,959,968 to Chin et al. ("Chin")

- U.S. Patent No. 8,503,329 to Mullooly et al. ("Mullooly")

- U.S. Patent No. 7,610,405 to Moberg et al. ("Moberg")

- U.S. Patent No. 7,916,628 to Ghosh et al. ("Ghosh")

- U.S. Patent No. 7,961,727 to Duncan et al. ("Duncan")

- U.S. Patent No. 8,005,013 to Teisberg et al. ("Teisberg")

- U.S. Patent No. 8,089,965 to Mitsumori ("Mitsumori")

- U.S. Patent No. 8,300,523 to Salam et al. ("Salam")

- U.S. Patent No. 8,446,913 to Cheng et al. ("Cheng")

- U.S. Patent No. 8,503,329 to Mullooly et al. ("Mullooly")

- U.S. Patent No. 8,570,856 to Southworth et al. ("Southworth")

- U.S. Patent No. 8,654,680 to Subramanian et al. ("Subramanian")

- U.S. Patent Pub. No. 2015/0195218 to Smith et al. ("Smith")

- KR101341272

- EP1982447 to Narayanan et al. ("Narayanan")

- U.S. Patent No. 7,161,948 to Sampath et al. ("Sampaht")

- U.S. Patent Pub. No. 2011/292939 to Subramaian et al. ("Subramaian")

- U.S. Patent No. 8,305,878 to Bishara et al. ("Bishara")

- U.S. Patent No. 8,582,423 to Page et al. ("Page")

- U.S. Patent Pub. No. 2003/53470 to Divivier ("Divivier")

- U.S. Patent Pub. No. 2008/219237 to Thubert et al. ("Thubert")

- U.S. Patent Pub. No. 2008/228943 to Balus et al. ("Balus")

- U.S. Patent Pub. No. 2010/2703 to Kogata et al. ("Kotaga")

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- U.S. Patent Pub. No. 2011/222536 to Saavedra ("Saavedra")

- U.S. Patent Pub. No. 2012/0020206 to Busi et al. ("Busi")

- U.S. Patent Pub. No. 2012/33668 to Humphries ("Humphries")

- U.S. Patent Pub. No. 2012/33673 to Goel ("Goel")

- U.S. Patent Pub. No. 2012/236730 to Zhou et al. ("Zhou")

- U.S. Patent Pub. No. 2013/64102 to Chang et al. ("Chang")

- U.S. Patent Pub. No. 2013/64137 to Santoso et al. ("Santoso")

- U.S. Patent Pub. No. 2013/73711 to Hanka et al. ("Hanka")

- U.S. Patent Pub. No. 2013/77621 to Da Silva et al. ("Da Silva")

- U.S. Patent Pub. No. 2013/336317 to Mithyantha et al. ("Mithyantha")

- CN102347881

- U.S. Patent Pub. No. 2003/0161275 to Malhotra et al. ("Malhotra")

- CN101615989

- CN101815107

- U.S. Patent Pub. No. 2007/0159988 to Khan et al. ("Khan II")

- U.S. Patent Pub. No. 2010/0020814 to Thyni ("Thyni")

- U.S. Patent Pub. No. 2012/0224510 to Bulusu et al. ("Bulusu II")

- TW2009/24434

- U.S. Patent Pub. No. 2007/0159987 to Khan et al. ("Khan III")

- U.S. Patent Pub. No. 2013/0070645 to Singh et al. ("Singh")

- U.S. Patent No. 7,656,788 to Ma et al. ("Ma")

- U.S. Patent Pub. No. 2013/010772 to Mainaud ("Mainaud")

- U.S. Patent Pub. No. 2010/0329268 to Hautakorpi et al. ("Hautakorpi")

- U.S. Patent Pub. No. 2011/0299402 to Vobbilisetty et al. ("Vobbilisetty")

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- U.S. Patent No. 8,159,935 to Fritz ("Fritz")

- U.S. Patent Pub. No. 2010/0214950 to Vobbilisetty ("Vobbilisetty II")

- U.S. Patent No. 7,139,926 to Madhav et al. ("Madhav")

- U.S. Patent No. 6,529,960 to Chao et al. ("Chao")

- U.S. Patent Pub. No. 2002/0176355 to Mimms et al. ("Mimms")

- U.S. Patent Pub. No. 2011/0176412 to Stine et al. ("Stine")

- RFC 2281 – Hot Standby Router Protocol (1998)

- RFC 5798 – Virtual Router Redundant Protocol (March 2010)

- Force10 Version 8.3.1.0 Quick Start Guide (December 15, 2009)

- Force10 Configuration Guide for the C-Series Version 7.7.1.0 (July 11, 2008)

- Force10 Configuration Guide for the C-Series Version 6.5.1.0 (March 2006)

- Data center Evolution – A tutorial on state of the art, issues, and challenges by Kant (2009)

- VLANs and Trunking by Hucaby et al. ("Hucaby") (October 25, 2002)

- VLAN Trunking using IEEE 802.1Q by Hedlund ("Hedlund") (November 27, 2007)

- Cisco NX-OS Software Virtual PortChannel (2010)

- Virtual PortChannel Quick Configuration Guide (July 6, 2009)

- Virtual Switching Systems Best Practices (2008)

- Link Aggregation Control Protocol (LACP) 802.3ad and VLACP for ES and ERS Technical Configuration Guide (September 2008)

- HP ProCurve Data Center Device Selection Guide (September 2009)

- Avaya Ethernet Routing Switch (October 2010)

8.   U.S. Patent No. 9,137,144

a)   Prior Art Patents / Patent Publications

- U.S. 2012/0106347 to Allan et al. ("Allan")

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- U.S. Patent No. 8,769,148 to Singh et al. ("Singh")

- U.S. 2008/0112323 to Agmon et al. ("Agmon")

- U.S. Patent No. 8,897,130 to Matthews et al. ("Matthews")

- U.S. Patent No. 9,049,137 to Markine et al. ("Markine")

- U.S. Patent No. 9,071,541 to Atlas et al. ("Atlas")

- IEEE Standard 802.1aq (June 29, 2012).

b)   Prior Art Systems

Defendants identify the following systems—including constituent software, hardware, methods, and processes—as prior art that anticipate or render obvious the Asserted Claims of this patent. Each system (1) was known or used in this country before the alleged invention of the claimed subject matter of the patent-in-suit; (2) was in public use and/or on sale in this country more than one year before the filing date of the application for the patent-in-suit; and/or (3) was invented and not abandoned, suppressed, or concealed prior to the alleged invention of the patent-in-suit. Defendants reserve the right to rely on the below systems themselves as prior art, as well as any of the references describing these systems individually or in any combination, as well as testimony from any inventor or developer of these systems.

- Dell PowerConnect 8024/8024F Switch, User's Configuration Guide (September 2011)

- Dell FTOS Configuration Guide for the S4810 System FTOS 8.3.10.1 (February 2012)

c)   Prior Invention Under § 102(g)

For any of the prior art that Defendants have identified, Defendants may argue that the authors or inventors of that prior art invented the subject matter claimed in the '144 patent prior to the filing date of the '144 patent, and discovery has not yet begun and Defendants will supplement as discovery commences.

d)   Obviousness and Secondary References

Defendants identify each of the references listed above as primary references that render

this patent anticipated, or at least obvious in view of the knowledge of a person of ordinary skill

in the art. In addition, these primary references may be combined with each other or with the

secondary references listed below to render this patent obvious under 35 U.S.C. § 103. One of

ordinary skill in the art would be motivated to combine these references as explained in Section

III.D:

- U.S. Patent No. 7,697,528 to Parry et al. ("Parry")

- U.S. Patent No. 7,724,704 to Simons et al. ("Simons")

- U.S. 2004/0264380 to Kalkunte et al. ("Kalkunte")

- U.S. 2009/0141622 to Bitar et al. ("Bitar")

- U.S. 2013/0258835 to Colven et al. ("Colven")

- KR20080050262A

- C. Hopps, Analysis of an Equal-Cost Multi-Path Algorithm (November 2000)

- Ching-Hung Yeh et al., A Secure VLAN Construction Protocol Wireless Ad Hoc
  Networks, Dept. of Engineering Science National Cheng-Kung University (IEEE
  2005)

C.   Claim Charts

Charts specifically identifying where each element of each Asserted Claim is found in the

prior art, either expressly or inherently, are found in Exhibits A-1–H-11. However, this prior art

is exemplary; the claimed features are similarly described or disclosed in other prior art.

In the claim charts included in this disclosure, Defendants identify specific portions of prior

art references that disclose or render obvious the elements of the Asserted Claims. Although

Defendants have identified at least one citation per element, each and every disclosure of the same

element in a given reference is not necessarily identified. That Defendants did not identify each,

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similar disclosure should not be construed as a concession by Defendants that such disclosure is not relevant. It should be recognized that a person of ordinary skill in the art would generally read a prior art reference as a whole and in the context of other publications, literature, and general knowledge in the field. To understand and interpret any specific statement or disclosure in a prior art reference, a person of ordinary skill in the art would rely upon other information including other publications and general scientific or engineering knowledge.

Where Defendants identify a particular figure in a prior art reference, the identification should be understood to encompass the caption and description of the figure as well as any text relating to the figure in the specification and prosecution history in addition to the figure itself. Similarly, where an identified portion of text refers to a figure or other material, the identification should be understood to include the referenced figure or other material as well.

Certain pieces of identified prior art disclose features of the Asserted Claims inherently. Defendants may rely on any evidence, including expert testimony, to establish the inherency of certain features of the prior art to invalidate the Asserted Claims.

D.   Motivations to Combine Prior Art

Defendants believe that no showing of a specific motivation to combine prior art is required to combine the references disclosed in the attached charts; there was a reason to make each combination, each combination of art would have produced no unexpected results, and each combination at most would simply represent a known alternative to one of ordinary skill in the art. *See KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 414–18 (2007) (rejecting the Federal Circuit's "rigid" application of the teaching, suggestion, or motivation to combine test instead espousing an "expansive and flexible" approach). Indeed, the Supreme Court held that a person of ordinary skill in the art is "a person of ordinary creativity, not an automaton" and "in many cases a person of

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ordinary skill in the art will be able to fit the teachings of multiple patents together like a pieces of a puzzle." *Id.* at 420–21.

In view of *KSR*, the PTO issued a set of new Examination Guidelines. *See* Examination Guidelines for Determining Obviousness Under 35 U.S.C. § 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, 72 Fed. Reg. 57,526 (Oct. 10, 2007). Those Guidelines identified various rationales for finding a claim obvious, including:

a) Combining prior art elements according to known methods to yield predictable results;

b) Simple substitution of one known element for another to obtain predictable results;

c) Use of known technique to improve similar devices (methods, or products) in the same way;

d) Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;

e) "Obvious to try"—choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;

f) Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations would have been predictable to one of ordinary skill in the art;

g) Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.

Id. at 57,529.

In addition, the motivation to combine or modify prior art references is significantly stronger when, as here, the references seek to solve the same problem, come from the same field, and correspond well. *In re Inland Steel Co.*, 265 F.3d 1354, 1362 (Fed. Cir. 2001) (allowing two references to be combined as invalidating art under similar circumstances where the art "focus[ed] on the same problem . . . [,] c[a]me from the same field of art [and] . . . the identified problem found in the two references correspond[ed] well").

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Defendants have identified several exemplary motivations and reasons to combine the various references cited herein, and those motivations would have been supported, in part, by a reasonable expectation of success. The various teachings, suggestions, and/or reasons to modify any of the references and/or to combine any two or more of the references in Exhibits A-1 through H-11 come from various sources, including the prior art (specific and as a whole), common knowledge, common sense, predictability, expectations, industry trends, design incentives or need, market demand or pressure, market forces, the nature of the problem faced, and/or the knowledge possessed by one of ordinary skill in the art. In addition, it would have been obvious to try combining the prior art references identified above.

These exemplary combinations demonstrate that there were only a finite number of predictable solutions to known problems addressed by the Asserted Patents. Furthermore, known work in one field or endeavor prompted variations based on predictable design incentives and/or market forces either in the same field or a different one. The combination of features found in the prior art references identified in these contentions would have been obvious because the claimed combinations represent the known potential options, with each such option having a reasonable expectation of success. Additionally, one of ordinary skill in the art would have been motivated to create combinations identified in these contentions using: known methods to yield predictable results; known techniques in the same way; a simple substitution of one known, equivalent element for another to obtain predictable results; and/or teaching, suggestion, or motivation in the prior art generally. Also, market forces in the industry, and the desire to improve features and performance, would motivate the addition of features to systems as they become available, become less expensive, become more commonly used, provide better performance and reliability, reduce costs, or predictably achieve other clearly desirable results.

To the extent Plaintiff alleges that any other claimed limitation or limitations are not disclosed in any primary reference, it would have been obvious to combine the teachings of the reference with the background knowledge of a person of ordinary skill in the art and/or it would have been obvious to incorporate the missing limitation(s), including as disclosed in Exhibits A-1 through H-11, into the primary reference for the reasons disclosed herein. For example, one of ordinary skill in the art would have found substantial motivation to combine one or more of the primary references with one more of each other or the secondary references in order to disclose the alleged inventions recited in the Asserted Claims. Each of the references disclosed herein as invalidating an Asserted Patent was directed at the same or similar field of technology and the same or similar problem as that Asserted Patent. To the extent Plaintiff alleges that any particular claim limitation is alleged to not be disclosed or inherent in the charted references, it would have been obvious to combine the charted reference with one or more of the references identified herein for the particular claim limitations. Also, as Defendants are currently unaware of the extent, if any, to which Plaintiff will contend that limitations of the Asserted Claims are not disclosed in the art identified herein as anticipatory, Defendants reserve the right to identify other references and combinations that may render an allegedly missing limitation obvious. In addition, if and to the extent that Plaintiff challenges the relevance of any of these references with respect to particular limitations of the Asserted Claims of the Asserted Patents, Defendants reserve their right to identify further motivation to combine particular references with additional particularity.

1.   **U.S. Patent No. 7,126,921**

a)   **Background State of the Art**

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein.

b)   **Exemplary Motivation to Combine**

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge or a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

- For the Asserted Claims of the '921 patent, to the extent the references charted in any of Exhibits A-1 to A-9 do not disclose "computing means for control of the nodes" or "a computing means for controlling the node" it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A. A person of skill in the art would be motivated to combine these references because they each disclose a network node and/or switch that forwards data packets. They also each disclose the propagation of node related information and link state information between nodes and/or switches. Propagation of link state information was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '921 patent, to the extent the references charted in any of Exhibits A-1 to A-9 do not disclose "data plane means for forwarding packets between the nodes, the data plane means being responsive to control signals from the computing means" or "data plane means for forwarding packets to other nodes in the network, the data plane means being responsive to control signals from the computing means" or "data plane means for forwarding packets to other nodes in the network and being responsive to control signals from the computing means" it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A. A person of skill in the art would be motivated to combine these references because they each disclose a network node and/or switch that forwards data packets. They also each disclose the propagation of node related information and link state information between nodes and/or switches. Propagation of link state information was a

feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results..

- For the Asserted Claims of the '921 patent, to the extent the references charted in any of Exhibits A-1 to A-9 do not disclose "data plane means comprising a means for fast propagation of node related information between the data plane means in each node and forwarding the information to the computing means in the network" or "data, plane [sic] means comprising means for fast propagation of node related information to and from the data plane means in other nodes in the network and forwarding the information to the computing means" or "link interface for the data plane means, comprising means for fast propagation of node related information to and from the data plane means in other nodes in the network and forwarding the information to the computing means at the node" it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A. A person of skill in the art would be motivated to combine these references because they each disclose a network node and/or switch that forwards data packets. They also each disclose the propagation of node related information and link state information between nodes and/or switches. It is the nature of the network node and switch companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '921 patent, to the extent the references charted in any of Exhibits A-1 to A-9 do not disclose "means for fast propagation of node related information comprises means for fast propagation of link state information" it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix A. A person of skill in the art would be motivated to combine these references because they each disclose a network node and/or switch that forwards packets. They also each disclose the propagation of node related information and link state information between nodes and/or switches. It is the nature of the network node and switch companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

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Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

2.   U.S. Patent No. 7,212,536

a)   Background State of the Art

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, the '536 patent discloses that IEEE standards 802.1D and 802.1Q were already well-known in the art. *See* '536 patent, col. 138-57.

b)   Exemplary Motivation to Combine

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge or a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "a bridge having a plurality of bridge ports, a first one of the bridge ports having a plurality of service interfaces, each of the service interfaces associated with a channel in a connection-based network," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Shtayer, Acharya, Katzri, Tomanga. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these

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combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "a map associated with the first one of the bridge ports, the map providing a correspondence between each of the plurality of priorities and one of the service interfaces," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Shtayer, Vajjhala, Acharya, Bullard, 802.1Q, Ginipalli. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "a forwarding system configured to read a priority of a data frame to be forwarded onto the connection-based network by way of the first one of the ports, identify a service interface which the map indicates corresponds to the read user priority and forward the data frame over the channel in the connection-based network associated with the identified service interface," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Vajjhala, Acharya, Bullard, Shtayer, 802.1Q, Hauser, Giinipalli, Elliott. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "means for reading priorities of data frames directed by the bridge to at least a first one of the bridge ports," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Vajjhala, Acharya, Katzri, Tomanga. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to

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monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "a plurality of service interfaces associated with the first one of the bridge ports, each of the service interfaces capable of being associated with a channel in a connection-based network," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Vajjhala, Acharya, Bullard, 802.1Q, Ginipalli. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "means for determining a number of the service interfaces associated with active channels in the connection-based network," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Vajjhala, Acharya, Bullard, Shtayer, 802.1Q, Hauser, Giinipalli, Elliott. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "means for establishing a mapping between user priorities read by the means for reading priorities of data frames and service interfaces associated with active channels in the connection-based network based at least in part on a number of the service interfaces associated with active channels in the connection-

based network," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Vajjhala, Acharya, Bullard, 802.1Q, Ginipalli, all of which disclose this limitation as shown in Appendix B. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '536 patent, to the extent the references charted in any of Exhibits B-1 to B-13 do not disclose "means for assigning frames to the service interfaces based upon the user priorities and the mapping," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix B, including, at least Vajjhala, Acharya, Bullard, Shtayer, 802.1Q, Hauser, Giinipalli, Elliott. A person of skill in the art would be motivated to combine these references because they each disclose a switch, bridge, or router, in which incoming packets or frames sent via a particular interface or port. It is the nature of the network switch or bridge companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

3.   **U.S. Patent No. 7,424,020**

a)   **Background State of the Art**

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, the '020 patent refers to computer networks, ethernet, fast ethernet, spanning tree protocols and computer networks. See '020 patent, col. 1:2-29.

b)   **Exemplary Motivation to Combine**

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does

not have a corresponding citation in that reference, it would be obvious to combine with the

knowledge or a person of skill and/or any other reference in the primary or secondary charts for

which there is a citation for that element. These combinations would have been obvious to try

given that there were a finite number of identified, predictable solutions in the prior art, and there

would have been a reasonable expectation of success to simply implement one prior art solution

with concepts from prior art in the same field.

- For the Asserted Claims of the '020 patent, to the extent the references charted in any of Exhibits C-1 to C-8 do not disclose "removing, at the network node, the protocol data of a portion of protocol layers from the received data stream," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least Shah, RFC 3022, Koo, RFC 2507, Haumont, and Boucher. A person of skill in the art would be motivated to combine these references because they each disclose computer networks. It is the nature of the network switch companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '020 patent, to the extent the references charted in any of Exhibits C-1 to C-8 do not disclose "the communication network is a bus system," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix C, including, at least Ma, Shah, 802.3u, Zinca, and Chadda. A person of skill in the art would be motivated to combine these references because they each disclose computer networks. It is the nature of the network switch companies to monitor developments in competing products and relevant standards and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '020 patent, to the extent the references charted in any of Exhibits C-1 to C-8 do not disclose "only one IP address is allocated to the network node for each of the two or more terminals connected to the network node," it would have been obvious to combine any of these charted references with any of the other charted

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references or those detailed in Appendix C, including, at least Ma, Shah, RFC 3022, Koo, Zinca, Adelman, and Haumont. A person of skill in the art would be motivated to combine these references because they each computer networks. It is the nature of the network switch companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

4.   U.S. Patent No. 7,453,888

a)   Background State of the Art

The background state of the art includes that which is set forth in the patent, the file

history, and the prior art references disclosed herein. For example, the '888 patent discloses

backbone VLAN provisioning including the use of IEEE 802.1Q VLAN identifiers was well

known. *See, e.g.*, '888 patent at 4:15-30, 5:49-62, & Fig. 2. The patent also discloses that many

network device manufacturers, such as Cisco and Riverstone had already used these identifiers to

provision backbone networks. *See id.* at 4:50-6:3, 8:4-57. Moreover, at least Cisco, Nortel,

Avaya, and HP had devices that were capable of provisioning backbone systems using IEEE

802.1Q VLAN identifiers prior to August 2002. *See, e.g.*, Avaya, User's Guide Avaya P333t

Stackable Switch Software Version 3.3, Avaya (June 2001) ("Avaya P333T Manual 3.3");

Avaya, User's Guide Avaya P333t Stackable Switch Software Version 3.8, Avaya (February

2002) ("Avaya P333T Manual 3.8"); Riverstone Networks, Inc., RS Switch Router User Guide

Release 7.0, Riverstone Networks, Inc. (2001) ("Riverstone Manual") (2001); Kennedy Clark et

al., Cisco LAN Switching, Cisco Press (August 26, 1999) ("Cisco LAN Switching"); Cisco

Systems, Inc., Catalyst 6000 Family Software Configuration Guide Software Release 6.1, Cisco

Systems, Inc. (2000) ("Cisco 6000 Manual"); Hewlett-Packard Company, *Advanced*

Configuration and Management Guide for the HP ProCurve Routing Switches 9304M, 9308M,

6308M-SX and the HP ProCurve Switch (software release 6.6.x and 7.1.x), Hewlett-Packard

Company (December 2000) ("HP ProCurve Manual"); Bradley Cain, *Fast link state flooding*,

Globecom '00 - IEEE. Global Telecommunications Conference. Conference Record (Cat.

No.00CH37137) (Dec. 2000) ("Cain IEEE").

b)   Exemplary Motivation to Combine

Defendants have identified several exemplary motivations and reasons to combine the

various references cited herein. For any reference for which there is a claim element that does

not have a corresponding citation in that reference, it would be obvious to combine with the

knowledge or a person of skill and/or any other reference in the primary or secondary charts for

which there is a citation for that element. These combinations would have been obvious to try

given that there were a finite number of identified, predictable solutions in the prior art, and there

would have been a reasonable expectation of success to simply implement one prior art solution

with concepts from prior art in the same field.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of
  Exhibits D-1 to D-16 do not disclose "obtaining at least one backbone VLAN Identifier
  (ID)" or "obtaining a plurality of backbone VLAN identifiers (IDs) associated with a
  corresponding plurality of provisioned backbone VLANs," it would have been obvious to
  combine any of these charted references with any of the other charted references or those
  detailed in Appendix D. A person of skill in the art would be motivated to combine these
  references because they each disclose a switch or switches capable of being configured to
  support backbone VLAN networks and disclose provisioning these networks using
  backbone VLAN IDs. They also all disclose switch or switches capable of running
  spanning tree protocols. Provisioning VLANs in backbone networks was a feature or
  functionality in numerous network switches as of the earliest possible priority date of this
  patent and it was common for network switch companies to monitor any features of
  competitors, and incorporate these features and functionalities. These combinations
  would have also been obvious to try given that there were a finite number of identified,
  predictable solutions in the prior art, and there would have been a reasonable expectation
  of success to simply implement one prior art solution with concepts from prior art in the
  same field. Moreover, these combinations would have been the result of applying known
  techniques to a known method—that was ready for improvement—to yield predictable
  results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "selecting a plurality of backbone VLAN trunks," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "associating each of the backbone VLAN ID with each one of the plurality of backbone VLAN trunks," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "determining a plurality of stackable trunk ports corresponding to the plurality of backbone VLAN trunks" or "determining at least one stackable trunk port corresponding to the backbone VLAN trunk" it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone

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networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "associating the backbone VLAN ID with each one of the plurality of stackable trunk ports" or associating the backbone VLAN IDs with the at least one stackable trunk port," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "the selection and association of at least one backbone VLAN ID with each one of the corresponding plurality of backbone VLAN trunks is undertaken irrespective of one of an in-use and a stand-by designation of each one of the plurality of backbone VLAN trunks and each one of the plurality of stackable trunk ports" or "the association of the plurality of backbone VLAN IDs with the backbone VLAN trunk is undertaken irrespective of one of an in-use and a stand-by designation of the backbone VLAN trunk and the at least one stackable trunk port," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite

number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "tracking previously obtained backbone VLAN IDs," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "issuing commands to the plurality of stackable trunk ports to enable support for backbone VLAN ID associated communications" or "issuing at least one command to the at least one stackable trunk port to enable support for backbone VLAN ID associated communications," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "issuing commands to determine a backbone VLAN

provisioning status associated with at least one of a backbone VLAN, a backbone VLAN trunk, a stackable trunk port, a tunnel access port, and a VLAN access port" or "issuing commands to determine a backbone VLAN provisioning status associated with at least one of a backbone VLAN, a backbone VLAN trunk, and a stackable trunk port," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '888 patent, to the extent the references charted in any of Exhibits D-1 to D-16 do not disclose "defining at least one switching rule by specifying one of: i. a VLAN access port to VLAN access port binding; ii. a VLAN access port to VLAN trunk port binding; iii. a VLAN access port to stackable trunk port binding; iv. a VLAN trunk port to VLAN trunk port binding; and v. a tunnel access port to stackable trunk port binding," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix D. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches capable of being configured to support backbone VLAN networks and disclose provisioning these networks using backbone VLAN IDs. They also all disclose switch or switches capable of running spanning tree protocols. Provisioning VLANs in backbone networks was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

5.   **U.S. Patent No. 7,565,435**

a)   **Background State of the Art**

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, the '435 patent discloses that spanning tree protocols and VLANs (as described in IEEE 802.1s and 802.1q) were already well-known in the art. See '435 patent, col. 1:15-37.

b) **Exemplary Motivation to Combine**

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge or a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

- For the Asserted Claims of the '435 patent, to the extent the references charted in any of Exhibits E-1 to E-17 do not disclose "setting the Internal Port Path Cost (IPPC) of one of the ports of one of said bridges within the MSTI to a high IPPC when said port is not part of the VLAN member set," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix E, including, at least Allied Telesyn, IBM BladeCenter, Seaman II, and Perlman. A person of skill in the art would be motivated to combine these references because they each disclose spanning tree protocols and setting spanning tree parameters. It is the nature of the network switch companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '435 patent, to the extent the references charted in any of Exhibits E-1 to E-17 do not disclose "setting the IPPC of one of the ports of one of said bridges within the MSTI to a lower IPPC when said port is part of the VLAN member set," it would have been obvious to combine any of these charted references with any of

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the other charted references or those detailed in Appendix E, including, at least Allied Telesyn, IBM BladeCenter, Seaman II, and Perlman. A person of skill in the art would be motivated to combine these references because they each disclose spanning tree protocols and setting spanning tree parameters. It is the nature of the network switch companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

6.   U.S. Patent No. 8,402,129

a)   Background State of the Art

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, the '129 patent discloses that polling and event reporting (as described in William Stallings, SNMP, SNMPv2, SNMPv3, RMON1 and 2, Adison Wesley, 1998), and reactive monitoring (as described in an article by Jia Jiao et al., *Toward Efficient Monitoring*, IEEE Journal on Selected Areas in Communications, 18 (5):723-732 (May 2000) were already well-known in the art. *See* '129 patent, col. 1:44-45, col. 1:66-col. 2:3.

b)   Exemplary Motivation to Combine

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge or a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

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- For the Asserted Claims of the '129 patent, to the extent the references charted in any of Exhibits F-1 to F-10 do not disclose "monitoring usage of the resource in a node to determine when a rate of change of the usage exceeds a first predetermined threshold," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a resource management system that measure a rate of change threshold or gather information from the devices in the system upon initiation or at periodic intervals. It is the nature of resource management system companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '129 patent, to the extent the references charted in any of Exhibits F-1 to F-10 do not disclose "reporting to a management station of the network when the rate of change of the usage exceeds said first predetermined threshold," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a resource management system that measure a rate of change threshold or gather information from the devices in the system upon initiation or at periodic intervals. It is the nature of resource management system companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '129 patent, to the extent the references charted in any of Exhibits F-1 to F-10 do not disclose "initiating a poll of resources in the nodes of the network by the management station in response to reporting from the node or a time interval being exceeded," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a resource management system that measure a rate of change threshold or gather information from the devices in the system upon initiation or at periodic intervals. It is the nature of resource management system companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been

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the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

7.   U.S. Patent No. 8,913,489

a)   Background State of the Art

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, prior to the filing date, many network device manufacturers had already begun to extend the concept of LAGs across multiple physical devices. LAGs across multiple devices was a natural extension of LAGs because multiple devices would eliminate a single point of failure if a single switch goes down. For example, at least Cisco, Nortel, Avaya, and HP had distributed LAGs across multiple physical devices available before 2010. Link Aggregation Control Protocol (LACP) 802.3ad and VLACP for ES and ERS Technical Configuration Guide) ("The IEEE 802.3ad Link aggregation control protocol can also be extended to a pair of [Split Multi Link Trunking] switches."); HP ProCurve Data Center Device Selection Guide (disclosing that certain switches had "distributed trunking" capabilities); Avaya Ethernet Routing Switch at 20 ("The number of links supported in an [Split Multilink Trunking] SMLT group is the same number of MLT links supported on the Ethernet Routing Switch platform being used for the Switch Cluster. The SMLT links can be spread across the Switch Cluster—usually in an even dispersion, but this is not an absolute requirement."); Cisco NX-OS Manual (describing the operation of Cisco NX-OS Software Virtual PortChannel).

b)   Exemplary Motivation to Combine

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the

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knowledge or a person of skill and/or any other reference in the primary or secondary charts for

which there is a citation for that element. These combinations would have been obvious to try

given that there were a finite number of identified, predictable solutions in the prior art, and there

would have been a reasonable expectation of success to simply implement one prior art solution

with concepts from prior art in the same field.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of
  Exhibits G-1 to G-22 do not disclose "reconfigur[ing] one or more of the first set of port
  interfaces of the multi-chassis link aggregate to form a link aggregate," it would have
  been obvious to combine any of these charted references with any of the other charted
  references or those detailed in Appendix G, including, at least Narayanan, Bulusu, Lapuh,
  Rose, Cisco NX-OS, Khan, Sane, Subramanian, Gowda, Grosser. A person of skill in the
  art would be motivated to combine these references because they each disclose a switch
  or switches with aggregation capabilities. Link aggregation, including across multiple
  physical devices, was a feature or functionality in numerous network switches as of the
  earliest possible priority date of this patent and it was common for network switch
  companies to monitor any features of competitors, and incorporate these features and
  functionalities. These combinations would have also been obvious to try given that there
  were a finite number of identified, predictable solutions in the prior art, and there would
  have been a reasonable expectation of success to simply implement one prior art solution
  with concepts from prior art in the same field. Moreover, these combinations would have
  been the result of applying known techniques to a known method—that was ready for
  improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of
  Exhibits G-1 to G-22 do not disclose "initiat[ing] a spanning tree protocol in the one or
  more of the first set of port interfaces," it would have been obvious to combine any of
  these charted references with any of the other charted references or those detailed in
  Appendix G, including, at least Narayanan, Khan, Smith, Chin, Bulusu, Rose, Cisco NX-
  OS, Thubert, Gowda, Grosser. A person of skill in the art would be motivated to combine
  these references because they each disclose a switch or switches with aggregation
  capabilities. Link aggregation, including across multiple physical devices, was a feature
  or functionality in numerous network switches as of the earliest possible priority date of
  this patent and it was common for network switch companies to monitor any features of
  competitors, and incorporate these features and functionalities. These combinations
  would have also been obvious to try given that there were a finite number of identified,
  predictable solutions in the prior art, and there would have been a reasonable expectation
  of success to simply implement one prior art solution with concepts from prior art in the
  same field. Moreover, these combinations would have been the result of applying known
  techniques to a known method—that was ready for improvement—to yield predictable
  results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "re-assigning link parameters designating the first set of ports as a multi-chassis link aggregate to link parameters designating the first set of ports as a link aggregate," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Narayanan, Khan, Smith, Chin, Bulusu, Di Benedetto, Gowda, Grosser. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "flush[ing] MAC table entries" and "re-populat[ing] MAC table entries as part of the link aggregate," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Narayanan, Smith, Chin, CN102347881, Malhotra, CN101615989, CN101815107, Khan II, Thyni, Bulusu II, TW2009/24434, Khan III, Singh, Assarpour, Di Benedetto, Gowda, Grosser, Lissianoi, Mieno, Tatikonda, Wakumoto, Wang. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "identifying a loop through the aggregation switch of packets belonging to a virtual local area network," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Smith, Chin, Bulusu, Assarpour, Cisco NX-OS, Di Benedetto, Gowda, Grosser. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible

priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "block[ing] forwarding of packets over the virtual fiber link," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Narayanan, Bulusu, Rose, Cisco NX-OS, Lapuh, Khan, Sane, Subramanian, Gowda, Grosser. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "receiving a command to operate in a stand-alone mode," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Moberg, Mainaud, Hautakorpi, Vobbilisetty, Fritz, Vobbilisetty II Hadhay, Chao, Mimms, Stine, Moberg, Configuring VSS, Cisco NX OS. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "determining link parameters for operating in the stand-alone mode from a predetermined table, wherein the link parameters for operating

in the stand-alone mode include link parameters for the link aggregate and a system identifier that is different from the system identifier of the remote aggregation switch," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Narayanan, Khan, Smith, Chin, Di Benedetto, Gowda, Grosser, Configuring VSS, Cisco NX OS. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '489 patent, to the extent the references charted in any of Exhibits G-1 to G-22 do not disclose "re-configuring the plurality of the first set of ports with the link parameters for the link aggregate," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix G, including, at least Narayanan, Khan, Smith, Chin, Bulusu, Assarpour, Cisco NX-OS, Di Benedetto, Gowda, Grosser, Configuring VSS, Cisco NX OS. A person of skill in the art would be motivated to combine these references because they each disclose a switch or switches with aggregation capabilities. Link aggregation, including across multiple physical devices, was a feature or functionality in numerous network switches as of the earliest possible priority date of this patent and it was common for network switch companies to monitor any features of competitors, and incorporate these features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

8.   U.S. Patent No. 9,137,144

a)   Background State of the Art

The background state of the art includes that which is set forth in the patent, the file history, and the prior art references disclosed herein. For example, the '144 patent discloses that IEEE standards 802.1aq, which specifies a number of equal cost tree protocols in order to assign paths to individual VLANS were already well-known in the art. *See* '144 patent, 1:38-57.

b)   **Exemplary Motivation to Combine**

Defendants have identified several exemplary motivations and reasons to combine the various references cited herein. For any reference for which there is a claim element that does not have a corresponding citation in that reference, it would be obvious to combine with the knowledge or a person of skill and/or any other reference in the primary or secondary charts for which there is a citation for that element. These combinations would have been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field.

- For the Asserted Claims of the '144 patent, to the extent the references charted in any of Exhibits H-1 to H-11 do not disclose "determining lowest cost paths from the plurality of contiguous communication paths," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a lowest or equal cost method of path assignment in network devices. It is the nature of network switch or related device companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '144 patent, to the extent the references charted in any of Exhibits H-1 to H-11 do not disclose "determining V mod N," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a lowest or equal cost method of path assignment in network devices. It is the nature of network switch or related device companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

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- For the Asserted Claims of the '144 patent, to the extent the references charted in any of Exhibits H-1 to H-11 do not disclose "comparing a result of the determining to indices on a path selection table that associates a unique index with each of the plurality of communication paths," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a lowest or equal cost method of path assignment in network devices. It is the nature of network switch or related device companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '144 patent, to the extent the references charted in any of Exhibits H-1 to H-11 do not disclose "selecting a path associated with an index equal to the result, wherein N is a number of the lowest cost paths in the plurality of communication paths and V is a group identifier corresponding to the group of communication traffic," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a lowest or equal cost method of path assignment in network devices. It is the nature of network switch or related device companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '144 patent, to the extent the references charted in any of Exhibits H-1 to H-11 do not disclose "the group of communication traffic comprises a plurality of VLANS," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a lowest or equal cost method of path assignment in network devices. It is the nature of network switch or related device companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

- For the Asserted Claims of the '144 patent, to the extent the references charted in any of Exhibits H-1 to H-11 do not disclose "a plurality of ports for network communication," it would have been obvious to combine any of these charted references with any of the other charted references or those detailed in Appendix F. A person of skill in the art would be motivated to combine these references because they each disclose a lowest or equal cost method of path assignment in network devices. It is the nature of network switch or related device companies to monitor developments in competing products and combine relevant features and functionalities. These combinations would have also been obvious to try given that there were a finite number of identified, predictable solutions in the prior art, and there would have been a reasonable expectation of success to simply implement one prior art solution with concepts from prior art in the same field. Moreover, these combinations would have been the result of applying known techniques to a known method—that was ready for improvement—to yield predictable results.

III.   INVALIDITY UNDER 35 U.S.C. § 112

Defendants allege that the Asserted Claims are invalid under 35 U.S.C. § 112 as indefinite (Section 112, ¶ 2) and for failing to satisfy the written description and enablement requirements (Section 112, ¶ 1). Defendants reserve all rights to amend their Invalidity Contentions under 35 U.S.C. § 112, including after the Asserted Claims are ultimately construed by the Court, in response to any interpretation of the Asserted Claims embodied in Plaintiff's infringement positions, and/or to account for any changes in the law concerning invalidity under 35 U.S.C. § 112. Defendants also reserve the right to provide additional explanation and/or argument for their Invalidity Contentions under Section 112, including, for example, based on expert testimony. Defendants' contentions that the Asserted Claims are invalid under Section 112 are not admissions regarding the construction or scope of the claims of the Asserted Patents, or that any of the claims of the Asserted Patents are not anticipated or rendered obvious by any prior art. All of the below statements are by way of example only. Any item disclosed below with respect to any patent or claim may, as appropriate, be asserted as a defense against any other patent or claim that has a similar claim limitation and patent disclosure.

A.   INVALIDITY UNDER 35 U.S.C. § 112, ¶ 1

35 U.S.C. § 112, ¶ 1 requires that the specification contain a written description of the invention. "[T]he hallmark of written description is disclosure." *Boston Scientific Corp. v. Johnson & Johnson*, 647 F.3d 1353, 1361–62 (Fed. Cir. 2011) (citation omitted). The test for whether a specification adequately describes an invention is "whether the disclosure of the application relied upon reasonably conveys to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date. . . . [T]he test requires an objective inquiry into the four corners of the specification from the perspective of a person of ordinary skill in the art …. [It] is a question of fact." *Ariad Pharms., Inc. v. Eli Lilly and Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc); *Boston Scientific*, 647 F.3d at 1362.

The enablement requirement of Section 112 demands that the patent specification enable "those skilled in the art to make and use the full scope of the claimed invention without 'undue experimentation.'" *Genentech, Inc. v. Novo Nordisk A*/S, 108 F.3d 1361, 1365 (Fed. Cir. 1997) (quoting *In re Wright*, 999 F.2d 1557, 1561 (Fed. Cir. 1993)). "[T]he scope of the claims must be less than or equal to the scope of the enablement." *Nat'l Recovery Tech., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1196 (Fed. Cir. 1999). In other words, the claims must be enabled over their entire claimed range. *See id.* (finding lack of enablement because the "claim [] [was] broader than the enablement as taught in the specification").

Defendants contend that the following Asserted Claims are invalid under 35 U.S.C. § 112, ¶ 1. Each Asserted Claim identified below (and each Asserted Claim that depends therefrom) is invalid under Section 112, ¶ 1 because the specification of the Asserted Patent fails to provide a sufficient written description, enabling disclosure. For each listed term or phrase, Defendants believe the term or phrase is invalid under Section 112, ¶ 1, as is any limitation including such terms or phrases, for the same reason(s).

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1.   **U.S. Patent No. 7,126,921**

- "computing means for control of the nodes" (claim 1) / computing means for controlling the node" (claims 9 & 17)

- "data plane means for forwarding packets between the nodes, the data plane means being responsive to control signals from the computing means" (claim 1) / "data plane means for forwarding packets to other nodes in the network, the data plane means being responsive to control signals from the computing means" (claim 9) / "data plane means for forwarding packets to other nodes in the network and being responsive to control signals from the computing means" (claim 17)

- "means for fast propagation of node related information between the data plane means in each node and forwarding the information to the computing means in the network" (claim 1) / "data, plane [sic] means comprising means for fast propagation of node related information to and from the data plane means in other nodes in the network and forwarding the information to the computing means" (claim 9) / "a link interface for the data plane means, comprising means for fast propagation of node related information to and from the data plane means in other nodes in the network and forwarding the information to the computing means at the node" (claim 17)

- "wherein the means for fast propagation of node related information comprises means for fast propagation of link state information" (claims 1, 9, and 17)

2.   **U.S. Patent No. 7,212,536**

- "bridge" (claims 1, 12)

- "plurality of bridge ports" (claims 1, 12)

- "a plurality of service interfaces" (claims 1, 12)

- "connection-based network" (claims 1, 12)

- "map providing a correspondence between each of the plurality of priorities and one of the service interfaces" (claim 1)

- "forwarding system configured to read a priority of a data frame e to be forwarded onto the connection-based network" (claim 1)

- "means for reading priorities of data frames directed by the bridge to at least a first one of the bridge ports." (claim 12)[8]

- "means for determining a number of the service interfaces associated with active channels in the connection-based network" (claim 12)

- "means for establishing a mapping between user priorities by the means for reading priorities of data frames and the service interfaces associated with active channels in the connection-based network based at least in part on a number of the service interfaces associated with active channels in the connection-based network" (claim 12)

- "means for assigning frames to the service interfaces based upon the user priorities and the mapping" (claim 12)

3.   **U.S. Patent No. 7,424,020**

- "useful data" (claims 1 and 6)

- "a portion of protocol layers" (claims 1 and 6)

- "bus system" (claims 1 and 6)

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[8]   The Court has held that this claim is invalid due to lack of lack of structure. No. 6:20-cv-00474-ADA, D.I. 94 at 6.

- "switching the remaining data stream to be transmitted to one of the terminals" (claim 1)

- "wherein only one IP address is allocated to the network node for each of the two or more terminals connected to the network node" (claims 1 and 6)

- "a first interface for connecting the network node with two or more terminals" (claim 6)

- "a second interface for connecting the network node with a communication network" (claim 6)

- "a control unit which removes protocol data from a portion of protocol layers from a data stream received from the communication network via the second interface, the data stream comprising useful data and the protocol data, and switches a remaining data stream to be transmitted to one of the terminals via the first interface" (claim 6)

4.   **U.S. Patent No. 7,453,888**

- "obtaining at least one backbone VLAN Identifier (ID)" (claim 1) / "obtaining a plurality of backbone VLAN identifiers (IDs) associated with a corresponding plurality of provisioned backbone VLANs" (claim 15)

- "selecting a plurality of backbone VLAN trunks" (claim 1)

- "associating each of the backbone VLAN ID with each one of the plurality of backbone VLAN trunks" (claim 1)

- the selection and association of the at least one backbone VLAN ID with each one of the corresponding plurality of backbone VLAN trunks is undertaken irrespective of one of an in-use and a stand-by designation of each one of the plurality of backbone VLAN trunks and each one of the plurality of stackable trunk ports (claim 1) /

"wherein the association of the plurality of backbone VLAN IDs with the backbone

VLAN trunk is undertaken irrespective of one of an in-use and a stand-by designation

of the backbone VLAN trunk and the at least one stackable trunk port" (claim 15)

- "tracking previously obtained backbone VLAN IDs" (claim 2)

- "issuing commands to the plurality of stackable trunk ports to enable support for

   backbone VLAN ID associated communications (claim 11) / "issuing at least one

   command to the at least one stackable trunk port to enable support for backbone

   VLAN ID associated communications" (claim 19)

- "issuing commands to determine a backbone VLAN provisioning status associated

   with at least one of a backbone VLAN, a backbone VLAN trunk, a stackable trunk

   port, a tunnel access port, and a VLAN access port" (claim 12) / "issuing commands

   to determine a backbone VLAN provisioning status associated with at least one of a

   backbone VLAN, a backbone VLAN trunk, and a stackable trunk port" (claim 20)

- "defining at least one switching rule by specifying one of: i. a VLAN access port to

   VLAN access port binding; ii. a VLAN access port to VLAN trunk port binding; iii. a

   VLAN access port to stackable trunk port binding; iv. a VLAN trunk port to VLAN

   trunk port binding; and v. a tunnel access port to stackable trunk port binding" (claim

   13)

5. **U.S. Patent No. 7,565,435**

- "said settings reestablish connectivity" (claims 1, 8, and 13)

- "Multiple Spanning Tree Protocol (MSTP) engine" (claims 3, 8, and 14)

- "fully-automatic manner or a semi-automatic manner" (claim 5)

- "IEEE standard recommended value" (claims 7, 11, and 18)

- "a Multiple Spanning Tree Protocol (MSTP) engine used for creating and configuring a plurality of Multiple Spanning Tree Instances (MSTIs) whose active topology covers the topology of the plurality of VLANs within the computer network" (claim 8)

- "a processing unit for creating VLAN member sets and associating each of said VLANs with an appropriate one of the MSTIs" (claim 8)

- "processing unit for setting the Internal Port Path Cost (IPPC) of one of the ports of one of said bridges within the MSTI to a high IPPC when said port is not part of the VLAN member set" (claim 8)

- "processing unit for setting the IPPC of one of the ports of one of said bridges within the MSTI to a lower IPPC when said port is part of the VLAN member set" (claim 8)

- "capable of creating, maintaining, or suppressing" (claim 12)

6.   **U.S. Patent No. 8,402,129**

- "rate of change of the usage" (claim 3)

- "time interval" (claim 3)

- "initiating a poll of resources in the nodes of the network by the management station in response to reporting from the node or a time interval being exceeded" (claim 3)

- "exceeds a predetermined threshold" (claim 3)

7.   **U.S. Patent No. 8,913,489**

- "virtual fiber link" (claims 1, 8, 15)

- "configured to form a multi-chassis link aggregate" (claim 1, 8, 15)

- "determine a connection failure of the virtual fiber link to the remote aggregation switch" (claims 1, 8)

- "generate a packet with pre-pended header from the incoming packet" (claims 6, 12)

- "the virtual fabric link" (claims 6, 12)

- "reconfigure one or more of the first set of port interfaces of the multi-chassis link aggregate to form a link aggregate for coupling to the edge node" (claims 1, 8, 15)

- "end node" (claim 8)

- "spanning tree protocol" (claims 1, 8, 15)

- "re-assigning link parameters designating the first set of ports as a multi-chassis link aggregate to link parameters designating the first set of ports as a link aggregate" (claims 3, 9)

- "reconfiguring the plurality of the first set of ports with the link parameters for the link aggregate" (claim 17)

- "link parameters" (claims 3, 9, 16, 17)

- "flush[] MAC table entries" (claims 4, 10, 18)

- "re-populat[e] MAC table entries as part of the link aggregate" (claims 4, 10, 18)

- "enabling spanning tree protocol on the first set of port interfaces" (claims 5, 11, 19)

- "identifying a loop through the aggregation switch of packets belonging to a virtual local area network" (claims 5, 11, 19)

- "blocking forwarding of packets belonging to the virtual local area network on one or more port interfaces of the aggregation switch to prevent the identified loop" (claims 5, 11, 19)

- "block forwarding of packets over the virtual fiber link" (claims 7, 13, 20)

- "receiving a command to operate in a stand-alone mode" (claim 15)

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- "determining link parameters for operating in the stand-alone mode from a pre-determined table, wherein the link parameters for operating in the stand-alone mode include link parameters for the link aggregate and a system identifier that is different from the system identifier of the remote aggregation switch" (claim 16)

8. **U.S. Patent No. 9,137,144**

- "group of communication traffic" (claims 1, 11, 14)

- "V is a group identifier corresponding to the group of communication traffic" (claims 1, 11, 14)

- "the group of communication traffic comprises a plurality of VLANs" (claim 4)

- "contiguous communications paths" (claims 1, 11, 14)

- "lowest cost paths" (claims 1, 11, 14)

- "determining V mod N" (claims 1, 11, 14)

- "unique index" (claims 1, 11, 14)

B. **INVALIDITY UNDER 35 U.S.C. § 112, ¶ 2**

Claims are indefinite under 35 U.S.C. § 112, ¶ 2 when they "fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014). For example, to the extent an asserted apparatus claim includes both apparatus and method limitations, that claim is invalid for indefiniteness under Section 112, ¶ 2 because it fails to identify or notify the public of what constitutes direct infringement. *See IPXL Holdings, L.L.C. v. Amazon.com, Inc.*, 430 F.3d 1377 (Fed. Cir. 2005). Similarly, a claim that uses means-plus function claiming is indefinite "[i]f the patentee fails to disclose adequate corresponding structure." *Williamson v. Citrix Online, LLC*, 792 F. 3d 1339, 1352 (Fed. Cir. 2015). A claim can also be found indefinite if it uses terms of degree. *See Interval*

Licensing LLC v. AOL, Inc., 766 F.3d 1364, 1371 (Fed. Cir. 2014). As the Federal Circuit has "explained, a term of degree fails to provide sufficient notice of its scope if it depends 'on the unpredictable vagaries of any one person's opinion.'" *Id.* (citation omitted). In addition, "a claim term that lacks an antecedent basis may . . . render a claim indefinite." *In re Downing*, 754 F. App'x 988, 996 (Fed. Cir. 2018).

Defendants contend that the following Asserted Claims are invalid under Section 112, ¶ 2. Each Asserted Claim identified below (and each Asserted Claim that depends therefrom) is invalid under Section 112, ¶ 2 because they fail to inform, with reasonable certainty, those skilled in the art about the scope of the claimed invention. For each listed term or phrase, Defendants believe the term or phrase is invalid under Section 112, ¶ 2, and any limitation including such term or phrase is also indefinite.

1.   **U.S. Patent No. 7,126,921**

- "computing means for control of the nodes" (claim 1) / computing means for controlling the node" (claims 9 & 17)

- "data plane means for forwarding packets between the nodes, the data plane means being responsive to control signals from the computing means" (claim 1) / "data plane means for forwarding packets to other nodes in the network, the data plane means being responsive to control signals from the computing means" (claim 9) / "data plane means for forwarding packets to other nodes in the network and being responsive to control signals from the computing means" (claim 17)

- "means for fast propagation of node related information between the data plane means in each node and forwarding the information to the computing means in the network" (claim 1) / "data, plane [sic] means comprising means for fast propagation

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of node related information to and from the data plane means in other nodes in the

network and forwarding the information to the computing means" (claim 9) / "a link

interface for the data plane means, comprising means for fast propagation of node

related information to and from the data plane means in other nodes in the network

and forwarding the information to the computing means at the node" (claim 17)

- "wherein the means for fast propagation of node related information comprises means

  for fast propagation of link state information" (claims 1, 9, and 17)

2.   **U.S. Patent No. 7,212,536**

- "connection-based network" (claims 1, 12)

- "map providing a correspondence between each of the plurality of priorities and one

  of the service interfaces" (claim 1)

- "forwarding system configured to read a priority of a data frame to be forwarded onto

  the connection-based network" (claim 1)

- "means for reading priorities of data frames directed by the bridge to at least a first

  one of the bridge ports" (claim 12)

- "means for determining a number of the service interfaces associated with active

  channels in the connection-based network" (claim 12)

- "means for establishing a mapping between user priorities by the means for reading

  priorities of data frames and the service interfaces associated with active channels in

  the connection-based network based at least in part on a number of the service

  interfaces associated with active channels in the connection-based network" (claim

  12)

- "means for assigning frames to the service interfaces based upon the user priorities and the mapping" (claim 12)

3. **U.S. Patent No. 7,424,020**

- "useful data" (claims 1 and 6)

- "a portion of protocol layers" (claims 1 and 6)

- "bus system" (claims 1 and 6)

- "switching the remaining data stream to be transmitted to one of the terminals" (claim 1)

- "a first interface for connecting the network node with two or more terminals" (claim 6)

- "a second interface for connecting the network node with a communication network" (claim 6)

- "a control unit which removes protocol data from a portion of protocol layers from a data stream received from the communication network via the second interface, the data stream comprising useful data and the protocol data, and switches a remaining data stream to be transmitted to one of the terminals via the first interface" (claim 6)

4. **U.S. Patent No. 7,453,888**

- "backbone VLAN Identifier[s] (ID[s])" (claims 1 and 15)

- "backbone VLAN trunk[s]" (claims 1 and 15)

- "associating each of the backbone VLAN ID with each one of the plurality of backbone VLAN trunks" (claim 1)

- "stackable trunk port[s]" (claims 1 and 15)

- the selection and association of the at least one backbone VLAN ID with each one of the corresponding plurality of backbone VLAN trunks is undertaken irrespective of one of an in-use and a stand-by designation of each one of the plurality of backbone VLAN trunks and each one of the plurality of stackable trunk ports (claim 1) / "wherein the association of the plurality of backbone VLAN IDs with the backbone VLAN trunk is undertaken irrespective of one of an in-use and a stand-by designation of the backbone VLAN trunk and the at least one stackable trunk port" (claim 15)

- "tracking previously obtained backbone VLAN IDs" (claim 2)

- "issuing commands to determine a backbone VLAN provisioning status associated with at least one of a backbone VLAN, a backbone VLAN trunk, a stackable trunk port, a tunnel access port, and a VLAN access port" (claim 12) / "issuing commands to determine a backbone VLAN provisioning status associated with at least one of a backbone VLAN, a backbone VLAN trunk, and a stackable trunk port" (claim 20)

5.   **U.S. Patent No. 7,565,435**

- "said settings reestablish connectivity" (claims 1, 8, and 13)

- "the topology of Virtual Local Area Networks (VLANs) being used within the computer network" (claims 1 and 13) / "the topology of the plurality of VLANs within the computer network" (claim 8)

- "fully-automatic manner or a semi-automatic manner" (claim 5)

- "said high IPPC is set to a value chosen sufficiently high" (claims 6, 10, and 17)

- "said lower IPPC is set to a value chosen sufficiently lower" (claims 6, 10, and 17)

- "among the first ones" (claims 6, 10, and 17)

- "are among the last ones commanded" (claims 6, 10, and 17)

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- "ideally between" (claims 7, 11, and 18)

- "IEEE standard recommended value" (claims 7, 11, and 18)

- "a Multiple Spanning Tree Protocol (MSTP) engine used for creating and configuring a plurality of Multiple Spanning Tree Instances (MSTIs) whose active topology covers the topology of the plurality of VLANs within the computer network" (claim 8)

- "a processing unit for creating VLAN member sets and associating each of said VLANs with an appropriate one of the MSTIs" (claim 8)

- "processing unit for setting the Internal Port Path Cost (IPPC) of one of the ports of one of said bridges within the MSTI to a high IPPC when said port is not part of the VLAN member set" (claim 8)

- "processing unit for setting the IPPC of one of the ports of one of said bridges within the MSTI to a lower IPPC when said port is part of the VLAN member set" (claim 8)

- "capable of creating, maintaining, or suppressing" (claim 12)

- "The bridge of claim 8, wherein: said high IPPC is set to a value chosen sufficiently high in such a way that the corresponding ports are among the last ones commanded by a Multiple Spanning Tree Protocol (MSTP) to start forwarding data traffic after a failure in the computer network; and said lower IPPC is set to a value chosen sufficiently lower than the high IPPC value in such a way that the corresponding ports are among the first ones commanded by the MSTP to start forwarding data traffic after the failure in the computer network." (claim 10) / "The computer network of claim 13, wherein: said high IPPC is set to a value chosen sufficiently high in such a way that the corresponding ports are among the last ones commanded by a Multiple

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Spanning Tree Protocol (MSTP) to start forwarding data traffic after a failure in the

computer network; and said lower IPPC is set to a value chosen sufficiently lower

than the high IPPC value in such a way that the corresponding ports are among the

first ones commanded by the MSTP to start forwarding data traffic after the failure in

the computer network." (claim 17)

- "The bridge of claim 8, wherein a network administrator using a command line

  interface is capable of creating, maintaining, or suppressing any of the plurality of

  MSTIs as well as one or more VLANs and their association to an appropriate MSTI

  of the plurality of MSTIs." (claim 12)

- "A computer network comprising: a bridge having a plurality of ports connected by

  links to other ports and bridges, wherein said computer network is capable of

  forwarding data frames between bridges by: creating and configuring a plurality of

  Multiple Spanning Tree Instances (MSTIs) whose active topology covers the

  topology of Virtual Local Area Networks (VLANs) being used within the computer

  network; creating VLAN member sets and associating each of said VLANs with an

  appropriate one of the MSTIs, each of said VLAN member sets indicating the ports in

  each of the bridges within one of the MSTIs to which data traffic destined to

  members of the associated VLAN is being forwarded; setting the Internal Port Path

  Cost (IPPC) of one of the ports of one of said bridges within the MSTI to a high IPPC

  when said port is not part of the VLAN member set; and setting the IPPC of one of

  the ports of one of said bridges within the MSTI to a lower IPPC when said port is

  part of a the VLAN member set; said settings reestablish connectivity in one of the

  MSTIs experiencing a failure by activating links whose activation ensures that the

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connectivity within the VLAN mapped onto and associated with the MSTI is not lost;

wherein said high IPPC is a value that is higher than any of the values used for the

IPPCs of ports that are part of the VLAN member set; and said lower IPPC is a value

that is based on a speed of the links that are connected to the corresponding ports that

are part of the VLAN member set." (claim 13)

6. **U.S. Patent No. 8,402,129**

- "initiating a poll of resources in the nodes of the network by the management station in response to reporting from the node or a time interval being exceeded" (claim 3)

- "rate of change of the usage" (claim 3)

- "time interval" (claim 3)

7. **U.S. Patent No. 8,913,489**

- "the first set of port interfaces of the multi-chassis link aggregate" (claims 1, 8, 15)

- "virtual fiber link" (claims 1, 8, 15)

- "the virtual fabric link" (claims 6, 12)

- "reconfigure one or more of the first set of port interfaces of the multi-chassis link aggregate to form a link aggregate for coupling to the edge node" (claims 1, 8, 15)

- "end node" (claim 8)

- "spanning tree protocol" (claims 1, 8, 15)

- "re-assigning link parameters designating the first set of ports as a multi-chassis link aggregate to link parameters designating the first set of ports as a link aggregate" (claims 3, 9)

- "reconfiguring the plurality of the first set of ports with the link parameters for the link aggregate" (claim 17)

- "link parameters" (claims 3, 9, 16, 17)

- "flush[] MAC table entries" (claims 4, 10, 18)

- "re-populat[e] MAC table entries as part of the link aggregate" (claims 4, 10, 18)

- "enabling spanning tree protocol on the first set of port interfaces" (claims 5, 11, 19)

- "identifying a loop through the aggregation switch of packets belonging to a virtual local area network" (claims 5, 11, 19)

- "blocking forwarding of packets belonging to the virtual local area network on one or more port interfaces of the aggregation switch to prevent the identified loop" (claims 5, 11, 19)

- "block forwarding of packets over the virtual fiber link" (claims 7, 13, 20)

- "receiving a command to operate in a stand-alone mode" (claim 15)

- "determining link parameters for operating in the stand-alone mode from a pre-determined table, wherein the link parameters for operating in the stand-alone mode include link parameters for the link aggregate and a system identifier that is different from the system identifier of the remote aggregation switch" (claim 16)

8.   **U.S. Patent No. 9,137,144**

- "contiguous communication path" (claims 1, 11, 14)

- "the plurality of contiguous communication paths" (claims 11, 14)

- "group of communication traffic" (claims 1, 11, 14)

- "V is a group identifier corresponding to the group of communication traffic" (claims 1, 11, 14)

- "the group of communication traffic comprises a plurality of VLANs" (claim 4)

- "lowest cost paths" (claims 1, 11, 14)

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- "determining V mod N" (claims 1, 11, 14)

- "unique index" (claims 1, 11, 14)

- "the plurality of communication paths (claim 1)

IV.   INVALIDITY UNDER 35 U.S.C. § 101

The Asserted Claims of the patents identified below are not patent-eligible under 35 U.S.C § 101. Defendants reserve all rights to amend their Invalidity Contentions under 35 U.S.C. § 101, including after the Asserted Claims are ultimately construed by the Court, in response to any interpretation of the Asserted Claims embodied in Plaintiff's infringement positions, and/or to account for any changes in the law concerning ineligibility under 35 U.S.C. § 101. Defendants also reserve the right to provide additional explanation and/or argument for their Invalidity Contentions under 35 U.S.C. § 101, including, for example, based on expert testimony. In particular, the abstract ideas set forth below are exemplary and based on Defendants' current understanding of the patents.

The law regarding patent-eligible subject matter under 35 U.S.C. § 101 has changed significantly since the issuance of several of the Asserted Patents. The Supreme Court has articulated a two-step framework for determining patent eligibility. *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014). At Step One, the court determines "whether the claims at issue are directed to" a "patent-ineligible concept[]," such as "laws of nature, natural phenomena, and abstract ideas." *Id.* This first step of the inquiry has been "described . . . as looking at the 'focus' of the claims," or "their 'character as a whole.'" *Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016).

If the claims are directed to one of those ineligible concepts, the Step Two inquiry asks whether the claims contain an "inventive concept," or "an element or combination of elements that

is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Alice*, 134 S. Ct. at 2355 (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1294 (2012)) (internal quotation marks omitted). At Step Two, "well-understood, routine, conventional activit[ies]" are insufficient to confer an inventive concept. *Mayo*, 132 S. Ct. at 1294. In the realm of computer-implemented inventions, merely adding "purely functional and generic" components does not "transform an abstract idea into a patent-eligible invention" because "[n]early every computer will include [such components] capable of performing the basic . . . functions required by the . . . claims." *Alice*, 134 S. Ct. at 2360. The Asserted Claims fail to meet that standard.

1.   **U.S. Patent No. 7,126,921**

        Step One. The claims are directed to an abstract idea, e.g., sending status information in a network. The patent admits that nodes containing control planes and data planes were known as part of the background of the technical field and that these nodes can send link state information using the control plane protocols. *See* '921 patent, 1:27-2:24 & Figs. 1-2. The patent does not purport to invent a new type of node, rather, it simply describes using the existing data plane to propagate link state information instead of using the control plane which has to go through a protocol to propagate link state information. *See id.* at 11:20-28.

        Step Two. There is no inventive concept recited in the claims that would transform the claims away from an abstract idea, e.g., sending status information in a network. As discussed, the patent admits that nodes containing control planes and data planes were known and sending link state information was well known in the art.

2.   **U.S. Patent No. 7,212,536**

        Step One. The claims are directed to an abstract idea, e.g., assigning resources based on priority. This is a basic and abstract idea in both the technical context and non-technical context.

Computing resources have long been assigned processing/memory resources based on priority.

In the non-technical context, this is just like having a separate line for first class passengers or for

Disneyland customers with a "Fast Pass." The patent admits that VLANs, bridges, and user

priorities were known as part of the background of the technical field. *See* '536 patent, 1:18-67.

The patent does not purport to invent a new type of bridge. Instead, it simply describes using

existing bridges and assigning channels to incoming frames based on the user priority, using an

unspecified mapping. Those frames are placed in the queue for the appropriate channel based on

their assigned priority. *Id.*, Fig. 6, 6:15-26.

       Step Two. There is no inventive concept recited in the claims that would transform the

claims away from an abstract idea, e.g., assigning resources based on priorities. The claims

recite mapping the incoming priority to a corresponding outgoing channel. That is all; nothing

beyond an abstract idea itself. As discussed, the patent admits that VLANs, bridges, and user

priorities were well known in the background.

3.   U.S. Patent No. 7,424,020

       Step One. The claims are directed towards an abstract idea, e.g., processing information.

This is a basic and abstract idea in both the technical context and non-technical context. The

claims are analogous to the real world example of a corporate mailroom processing mail. The

recipients inside a large office building will have one physical address. When mail is delivered

to the mailroom, the mailroom can remove the envelope/packaging box and route the contents to

the recipient.

       Step Two. There is no inventive concept recited in the claims that would transform the

claims away from an abstract idea, e.g., information processing. The claims recite removing

certain data from a data stream and forwarding remaining data to the destination. There is no

claim to particular hardware other than general purpose hardware and/or software. This is

nothing more than an abstract idea.

4.   U.S. Patent No. 7,565,435

Step One. The claims are directed towards an abstract idea, e.g., routing traffic to avoid

undesirable paths. This is a basic and abstract idea in both the technical context and non-

technical context.   In the non-technical context, this is similar to charging a toll on roads to

minimize vehicular traffic. The patent admits that VLANs and spanning tree protocols were

known as part of the background of the technical field. See '435 patent, 1:15-37. The patent

does not purport to invent a new type of bridge or computer network. Instead, it simply

describes using existing bridges and changing a pre-existing setting.

Step Two. There is no inventive concept recited in the claims that would transform the

claims away from an abstract idea, e.g., routing traffic. The claims recite having a high cost for

undesirable paths and a low cost for desirable paths. That is all; nothing beyond an abstract idea

itself. As discussed, the patent admits that VLANs and spanning tree protocols were well known

in the background.

5.   U.S. Patent No. 8,402,129

Step One. The claims are directed to an abstract idea, e.g., monitoring resource usage.

This is a basic and abstract idea in both the technical context and non-technical context.

Monitoring resource usage has long been used to manage traffic and storage issues. In the non-

technical context, this is just like having an inventory management system in any retail store

where orders are made periodically or once a minimum threshold of items is reached. The patent

admits that reactive network monitoring, including polling and event reporting, were known as

part of the background of the technical field. *See* '129 patent, 1:43-46. The patent does not

purport to invent a new type of resource management system. Instead, it simply describes using

existing reactive monitoring systems to include a rate of change threshold within event reporting. *Id.*, 2:62-3:6.

Step Two. There is nothing in the claims that amounts to inventive concept. The claim does not identify any specific software that is required to perform the claim. The claim just recites the basic and abstract steps in functional language: (1) monitor usage; (2) report anomalies; (3) initiate poll of resources. Thus, the '129 patent method is implemented on conventional software (e.g., network monitoring and management systems) and do not discuss any novel technological solution.

6.   U.S. Patent No. 9,137,144

Step One. The claims are directed to an abstract idea, e.g., network path selection. This is a basic and abstract idea in both the technical context and non-technical context. Path selection has long been used to managed traffic and storage issues. In non-technical terms this is much like alternating cash register lines at the supermarket; as soon as a cash register becomes available the person in line A goes to that register, then the person in line B to the next, etc. The patent admits that equal cost protocols in order to assign paths to individual VLANS, were known as part of the background of the technical field. *See* '129 patent, 2:6-7. The patent does not purport to invent a new type of path assignment system. Instead, it simply describes low cost path assignment using a V mod N calculation where V is the group identifier and N is the number of available paths. *Id.*, 2:26-38.

Step Two. The claims do not recite any inventive concept. Further, the claims do not identify any specific hardware that is required to perform the claim. As has been well-known in the art for many years, the claims merely recite assigning one of the lowest cost paths in a round robin fashion using V mod N (i.e., choosing a number between 0 and N-1). Thus, the '144

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patent methods are implemented on conventional hardware (e.g., routers and switches) and do not discuss any novel technological solution.

V.   ACCOMPANYING DOCUMENT PRODUCTION

Pursuant to the Scheduling Order (D.I. 50), Defendants have produced all prior art referenced in their Invalidity Contentions (*see* documents with the prefix "Dell-WSOU-PA-" produced herewith), and summary annual sales information for the prior two years. *See* documents with the prefix "Dell-WSOU-" produced herewith. Defendants will promptly produce any documents uncovered during discovery, including through third-party subpoenas.

 Dated: June 25, 2021   By: */s/ Brian A. Rosenthal*

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Certificate of Service

I hereby certify that on June 25, 2021, the foregoing document has been served by

electronic mail on all counsel of record.

/s/ Ryan Iwahashi
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